

My Effectual Journey as a Jewellery Designer

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Abstract

Effectuation is a framework and a thinking process based on Saras D. Sarasvathy's interviews of expert entrepreneurs that has emerged as an alternative for causal rationality based on a linear and analytical thinking in the fields of entrepreneurial studies and entrepreneurship. Effectuation is an approach to study and develop the entrepreneurial knowledge and actions in practice through a set of heuristics that apply to the challenges entrepreneurs are bound to face. This thesis aims to introduce and validate effectuation using my experience as a jewellery designer to give a face validity whether the framework of effectuation works and link it to practice through a case study and exploration. The objective is to identify inflection points and intersections between the design processes and effectual thinking so that the supportive structures for entrepreneurs, application processes and studies can be developed to encourage an entrepreneurial mindset and practice. In the literature review the basic elements of effectuation, process model and heuristic principles, are introduced. The case study of my personal design infused journey as a jewellery designer is mapped through the historical timeline paying attention to the similarities between design processes and the effectual framework. The study provides a conclusion that the design processes and my experiences as an entrepreneur in the field of design resonate strongly with effectuation and that this perspective should be viewed as a valuable addition to the entrepreneurial development during studies, venture creation and entrepreneurship. Furthermore, the conclusion is that Aalto University and its students could benefit by applying effectual thinking throughout their studies helping to adapt a practical entrepreneurial mindset and a more systematic creation of means, goals and networks.

Keywords effectuation, causation, entrepreneurship, jewellery

For Chao

Thank You Peter & Peter

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1 Introduction

Since the mid 1990's entrepreneurship has been recognized as the key driver of economic growth, competitiveness and the job creation and with that expansion there has been a similar increase in the field of entrepreneurship education (Kuratko 2005, Ucbasaran 2008). When the business environments changes at a fast pace it is also clear that there is a need for new ways to research and teach entrepreneurship instead of 'one size fits all' theories and methods (Fayolle 2008, Ucbasaran 2008).

1.1 Research background

The importance of entrepreneurship education and the supporting systems for entrepreneurs is right now emphasized in Finland strongly after many years of a challenging economic situation with associated layoffs especially among traditional industries. In Finland small and medium size companies have taken the role of creating new jobs and in order to support this development entrepreneurial studies and research have become an even more important topics.

Entrepreneurial performance has traditionally been studied either as a set of personality traits of the entrepreneur explaining success or failure or as a set of circumstances or attributes of the project and its environment. In the past decade, an emerging theory called effectuation has introduced a different perspective. In her original study, Saras Sarasvathy found a logic that 27 entrepreneurial experts she interviewed followed especially in unpredictable and uncertain situations. This thinking process was named *effectual logic*, and it has emerged as an alternative for *causal rationality or logic* based primarily on linear and analytical thinking. Effectuation should not be seen as opposite to causal thinking, but rather a complimentary alternative approach that can be used when entrepreneurs are faced with uncertainties (Sarasvathy

2001). Commonly used causal logic is the reasoning that assumes the future is predictable while in real life entrepreneurs often face a complex and dynamic environment. In her study Sarasvathy (Sarasvathy 2008) points out that even if she teaches effectuation she does not teach it as the only way to do entrepreneurship but as one of the two ‘toolboxes’, the other one being the causal approach.

The starting point for this research was the discovery of Sarasvathy’s effectuation theory through my professor Peter McGrory after a discussion in order to find a theoretical framework for my thesis that I as a practitioner could relate to. In his validation study, Chandler (Chandler et al., 2011) tells about conversations with a successful entrepreneur who stated that she was glad there was a name for what she has been doing. This was the feeling I also had after I first time started to read about effectuation. I have been a full-time entrepreneur since 1999 designing and producing jewelry, and I have learned the entrepreneurial principles and approach through practice step by step.

The global economic downturn, that has affected Finland and many other countries, has made the challenging task of supporting entrepreneurship and the SMEs a national priority even if the actions have been so far more modest than the promises. A new kind of thinking and support that allows flexibility and exploration are missing as existing organizations supporting entrepreneurship rely almost exclusively on a causal logic approach. Effectuation provides interesting possibilities to develop the entrepreneurial education and thinking, and should be considered as a valuable addition not just for the design schools and all the entities collaborating with them but also for the different government institutions that play a part in supporting entrepreneurs and their growth. Even if the principles of effectuation and the observations from this study are applicable everywhere, it is important to note that the context of this study is Finland.

1.2 Research objectives and questions

This thesis aims to provide new perspective for the research of effectuation from a designer's perspective through a retrospective case study exploration and illumination deepening the understanding of what entrepreneurs in the field of design do and how design processes resembling effectual principles exist in design schools in practice.

My personal experience resonates strongly with the original interviews of 27 expert entrepreneurs, so my main motivation for this study is to identify those intersections between the effectual framework and real life. The design education and my work as a designer help me to notice the elements of effectuation, that seem to have strong empathy for the design processes and ways designers think and act. My role as an entrepreneur and researcher gives me a unique perspective and fifteen years of entrepreneurial history give a long enough time period to observe and analyze entrepreneurship in practice.

This case study and exploration aim to identify the elements and the moments that have had a decisive effect on my entrepreneurial success or failure before and during venture creation. Part of this research is to investigate the bridge between the world of entrepreneurship and the design processes that give us guidance for developing entrepreneurial education.

I aim to use this research to develop my company and the possible new ventures more professionally in the future with the broader understanding it has provided.

Objectives of this study:

1. To add a designer's perspective and new data to the research and validation of the question does the theory of effectuation follow the principles and the decisions expert entrepreneurs make during venture creation processes.
2. To identify the inflection points and the intersection between the design processes and effectual thinking so that supporting structures for entrepreneurs, application processes, and studies can be developed to create an entrepreneurial mindset and supportive environment.
3. To present the framework of effectuation at a practical level through examples and detailed stories, so that this thesis can be used as an aid for venture creation.
4. To conduct a study of effectual method and reflection to create real value for me as an entrepreneur for the future.

1.3 Research approach

This research focuses on my journey as a jewellery designer and as an entrepreneur, not to the companies and collaborations I have worked on or to their performance. Research is conducted through investigating the historical timeline of studies and work identifying inflection points that have changed the course of my career. Special attention has been given to the similarities between design processes and the effectual logic. A limited number of interviews are conducted to reduce bias and to verify details from the past twenty plus years of my professional studies and entrepreneurial history. In this thesis, I will first present the starting point for this work followed by the theoretical framework of effectuation in the literature review. I will then tell my personal journey as a jewelry designer focusing on the effectual elements. In the end, I will describe my findings and conclusions to answer the questions outlined in the objectives of this study.

1.4 Definition of key concepts

Logic of effectuation

The logic of effectuation is a thinking framework that describes the process that expert entrepreneurs undergo during new venture creation. It is also a set of heuristics and principles that explain how effectuation is driven by means, affordable loss, leveraging contingencies, committing to partnerships and focusing activities on controlling the future.

Causal reasoning

Unlike effectuation, causal reasoning focuses on assembling means after goals, targeting on returns, presuming competitors are rivals and minimizing the probability of unexpected outcomes.

Heuristics

Approach and behavior, where knowledge is gained by experimentation, evaluation or “trial-and-error” methods. These rule-of-thumb principles shorten decision-making but while they are helpful in many situations, they can also lead to biases or blinkered thinking.

Expert entrepreneurs

Entrepreneurs who have acquired tacit, learnable and teachable aspects of experience that are related to high performance in specific domain.

Novice entrepreneurs

Entrepreneurs who lack prior business ownership and working experience including deliberate practices that turn experiences into expertise.

2 Literature review

In the literature review, I will present the main principles of effectuation and the heuristics of effectuation that help to connect the theory to the real life. This literature review also connects literature to my observations of how effectual thinking is the way entrepreneurs think and act and how the effectual cycle is a very similar mechanism as the design processes embedded into design education. Similarities between the design processes and effectuation exist even before the level of expertise due the fact that designers possess a strong voice and knowledge of their means from the very beginning of their studies. The details of Saras D. Sarasvathy's design are described in the following chapter, 'Effectuation'.

2.1 Effectuation

Effectuation belongs to the group of so-called 'emerging theories' in entrepreneurship research, which contrast with the more traditional models of entrepreneurship. Prominent emerging approaches like effectuation (Sarasvathy 2001) and entrepreneurial bricolage (Baker & Nelson 2005) suggest that under certain conditions entrepreneurs take a different route to identifying and exploiting opportunities (Fischer 2012). This thesis focuses on effectuation that in contrast to traditional approaches often referred as teleological model (Kraaijenbrink et al. 2010) or causal logic (Sarasvathy 2008), aim to understand entrepreneurship in a uncertain and dynamic environments where goals change and are shaped and constructed constantly over time, sometimes even by change (Fischer 2012). Effectuation provides for this research the most interesting frame while bricolage is the most relevant theory to entrepreneurs operating in the resource constraint penurious environments creating something from nothing. Entrepreneurial research includes multiple other approaches that also have strong empathy for effectuation, like opportunity recognition (Baron 2006), but this thesis aims to focus solely on effectuation and comparison to the traditional analytical

thinking in cases it helps to explain the differences of these two methods or when it is important to talk about how these two approaches support each other.

The idea of effectuation started to develop at the end of the 1990s and found its current form after an empirical study of 27 expert entrepreneurs by Saras D. Sarasvathy. The goal for effectuation has been since the beginning to create not just a theory, but a logic of entrepreneurial action that has applications to practice providing a better way to control a future that is inherently unpredictable (effectuation.org). The logic of effectuation is divided into three main parts. The theoretical process model explains the elements of the effectual cycle and how they are related to each other. The second part introduces process elements of entrepreneurial expertise and the heuristic principles that explain the pragmatist approach that provides us useful implications to everyday life, especially for decision making. The third part is the logic of entrepreneurial expertise that provides a comprehensive alternate frame for tackling entrepreneurial problems (Sarasvathy 2001, 2008). Effectuation can also be viewed through four distinct dimensions:

1. Experimentation – trying different approaches in the marketplace before settling on a business concept
2. Affordable loss – predetermining how much one is willing to lose and experimenting within the bounds of that constraint
3. Flexibility – adapting to changing circumstances, unexpected events, and new knowledge
4. Precommitments – establishing early relationships with customers, suppliers, and other strategic partners to reduce uncertainty and spread responsibility to other stakeholders

(Fischer 2012)

Effectuation identifies and questions basic assumptions of how individuals think and behave when starting businesses, and offers an alternative explanation to causation (Perry et al. 2012). In real life entrepreneurs constantly balance both causal and effectual approaches depending on circumstances, what is the company's position in the life cycle and what is entrepreneur's level of expertise (Sarasvathy 2008). In effectuation, causation is viewed as the inverse of effectuation even if some researchers argue that this statement should be refined and extended (Kraaijenbrink 2010).

While causation starts with the effect to be created, effectuation starts with the means. In causation, objectives are defined first and the systematical actions are taken in order to achieve the set goals in order to maximize the returns. Dew et al. (Dew et al. 2005) found in their study, comparing expert and novice entrepreneurs that 89 per cent of experts preferred an effectual logic over the causal logic, whereas 81 per cent of novice entrepreneurs used causal rather than effectual approaches. In her book Sarasvathy (Sarasvathy 2008) describes the difference between these two logics as following:

“Causal problems are problems of decision; effectual problems are problems of design. Causal logic helps us choose; effectual logic helps us construct. Causal strategies are useful when the future is predictable, goals are clear and the environment is independent of our actions; effectual strategies are useful when the future is unpredictable, goals are unclear and environment is driven by human action. The causal actor begins with an effect he wants to create and asks, ‘What should I do to achieve this particular effect?’ The effectuator begins with her means and asks, ‘What can I do with the means?’ And then again, ‘What else can I do with them?’” (Sarasvathy 2008)

It is also worth noticing that while literature and this research focuses on promoting effectuation as a worthy alternative to causal thinking, effectuation should not be viewed as a way to launch an entire business or as a system that will tell you what to do. Effectuation is also “not planning”, but needs understanding and a logical approach in order to be an effective tool in venture creation (effectuation.org). Effectual actions happen all the time,

and the balance of effectual and causal thinking change during the lifespan of a venture. Even if research of effectuation has developed around the new venture creation setting, it has more recently been extended to address also the finance and the innovation questions (Stuart et al. 2009).

According to Sarasvathy's study (Sarasvathy 2008) when entrepreneurs turn into experts they are able to look for the new business opportunities using the effectual logic and then change back to the causal logic when the new business finds its form and should be developed further with the analytical and goal orientated logic. The main difference between the causal and the effectual logic is that the causal logic is linear following a set of agreed limitations that often prevent seeing new surprising possibilities, whereas effectuation happens in cycles praising the unexpected and accidental things in a fashion of typical design process using experimentation and prototyping.

Even if effectuation is a framework that appears very logical, it is still a relatively new concept and there are still several challenges to overcome. One main challenge effectuation still faces is the limited number of publications and the fact that the majority of material is produced by Sarasvathy and a handful of other scholars closely connected to her. More validation is needed before effectuation can become a widely accepted theory. There is also criticism towards the effectuation in several articles over issues like over-trust and effectuation (Goel and Karri 2006 & 2008) and links between the effectuation and research by Ludwig Lachmann (Chiles et al. 2007 & 2008). The research around the difference between causal and effectual approaches includes also many other interesting fresh approaches that still need to be answered. Zhang and Cueto (Zhang & Cueto 2014) have been researching the effect of biased natures of entrepreneurs and conclude that understanding the relationships between the effectual and causal heuristics and the entrepreneurial biases is a critical step for the theoretical development of effectuation.

The observations made by Kraaijenbrink (Kraaijenbrink, 2008, 2010 & 2012) for the improvement of effectuation are about oversimplification of causal and effectual approaches as two different independent models and how research should be aimed at the characteristics that differentiate these two models or the other models that fall outside these two entrepreneurial strategies. Many elements of the entrepreneurial approaches and actions are clearly shared between the effectual and the causal thinking, like affordable loss and flexibility and they can't be divided or named as opposites belonging only to a single approach (Fischer 2012, Kraaijenbrink 2010). Kraaijenbrink points out other unanswered questions like can the effectuation be taught to and learned by novice entrepreneurs, what are the effects of following an effectual strategy in terms of growth and financial success, and how does effectuation really work in practice (Kraaijenbrink 2011 & 2012). Also, the unequivocal way that leaves no doubt how the relation between the dimensions of experimentation, affordable loss, and flexibility exists in effectuation is questioned.

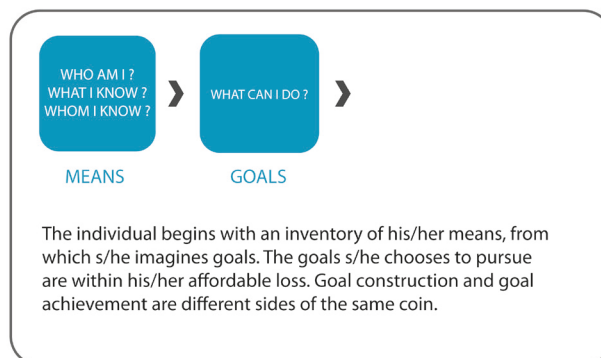
Causal logic has a strong part in the research of effectuation and also this thesis states that while effectuation is a valuable addition for entrepreneurial thinking and education it should be combined with causal thinking whenever necessary.

Besides a comparison between effectual and causal thinking this case study provides also an observation from the designer's point of view how the way designers think and work bears a clear resemblance to the many other facets of Sarasvathy's framework. Similarities seem to exist both in the design school experience and in running and developing the company after some years of practical experience. Through these findings, this thesis also provides a valuable perspective to the question is it possible for novice entrepreneurs to apply effectuation if they are embarking on their first venture.

2.1.1 Process model

The process model is a logic that happens in the mind of an individual providing a way of thinking about making decisions when non-predictive control is required. The model does not provide a list or algorithm of what you should do, but rather a set of heuristics that match the challenges entrepreneurs face (effectuation.org). The cycle starts from means and goals and continues to rotate as interactions and commitments creating new means and new goals taking the entrepreneur towards new products, markets, and ventures. The logic of effectuation works following way:

The cycle always starts here



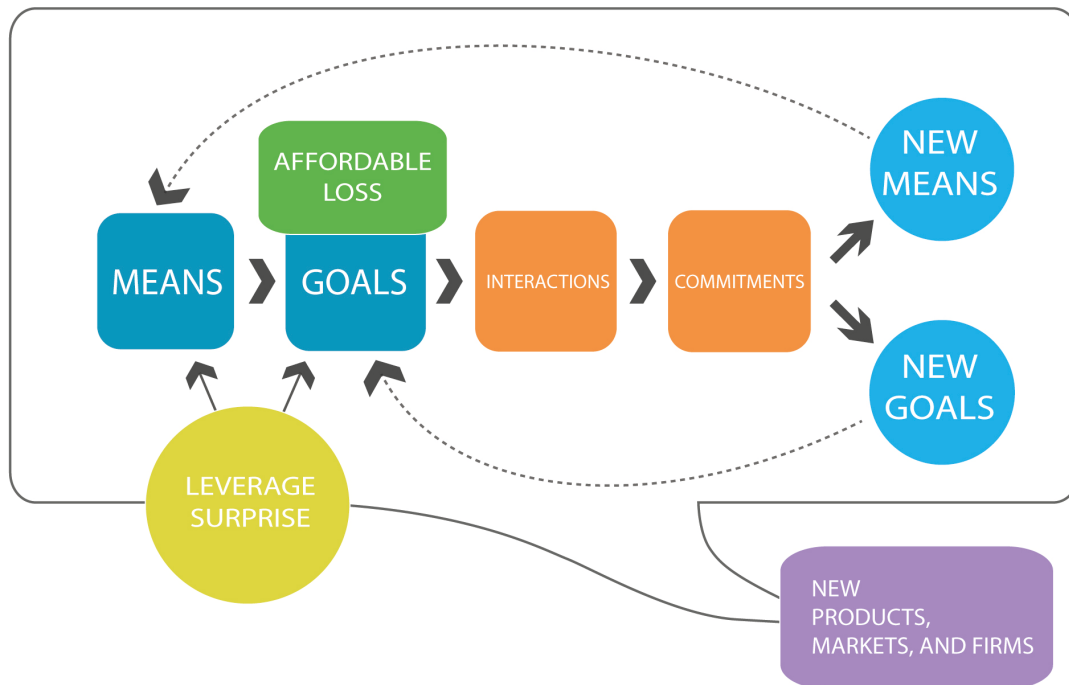
Next, interact with people
to gather stakeholder commitments



effectuation.org

Putting it all together...

The cycle continues as the effectual entrepreneur grows closer and closer to a defined, sellable product(s), complete with committed customers and stakeholders comprising the new market



effectuation.org

The process model of effectuation starts always from means from which entrepreneur imagines goals. Entrepreneurs focus on who he is, what he knows and whom he knows and sets through interaction in motion a network of stakeholders, each of whom makes a commitment and increases the resources available to the network. In effectuation stakeholders commit their means and resources often using the principle of affordable loss that helps them to manage the risks and the pool of means and resources that is gathered in the end is over time transformed into new alternatives instead of selecting among existing ones assuming there is no fatal conflicts or exogenous shocks that can dissolve the network (Sarasvathy 2008).

The process model of effectuation is referred also as the 'Cycle of Effectuation'. Every cycle of new stakeholder commitment based on interactions

creates new resources and increases the size of the network. The process model also includes elements of affordable loss and leveraging surprises, approaches that help to limit the risk and embrace surprise factors as they are encountered. Also, changes in the environment can affect both the means and the goals in a similar way as the stakeholder commitments do. Means add to the expanding cycle of resources and constraints either change or add new goals.

The feedback loops adding new means and goals to the effectual cycle are in the practical level the same thing as the inflection points where the entrepreneurs through their new means and goals often take a new direction or start a new affordable loss experiment. For me personally such a cycle or clear inflection point was when after working several years using a certain business model I moved forward from my first venture, X8, and started the current company Chao & Eero, that has a different way of running the business based strongly on the means and the goals that were slowly gathered and planned during the time in X8.

The effectual cycle and the way it works is in the essence also the same mechanism how the design process works in design school where the new means create new goals through learning and experimenting just as the Sarasvathy's effectual cycle proposes. Leveraging the surprises and interaction are also the same building blocks both in the framework of effectuation and in the design process especially when there is room for the projects and experiments instead of just lectures or preset formats of teaching. Because the designers, even the students, possess a strong voice and knowledge of their means, effectuation happens already before the level of entrepreneurial expertise.

The creation of my second venture Chao & Eero was a good example of how means and goals create new business and later on the case of collaboration with our Japanese partner and establishment of our business in a new level in Japan an example how the commitment with the new stake-

holders helps the effectual cycle to move forward. The partner in Japan encouraged us to set new goals in a higher level and also made us find and develop new means to match the new challenges. This collaboration has led to the creation of new products and markets that will be launched later. Both these cases will be presented in detail in the chapters 'X8' and 'Chao & Eero' to follow.

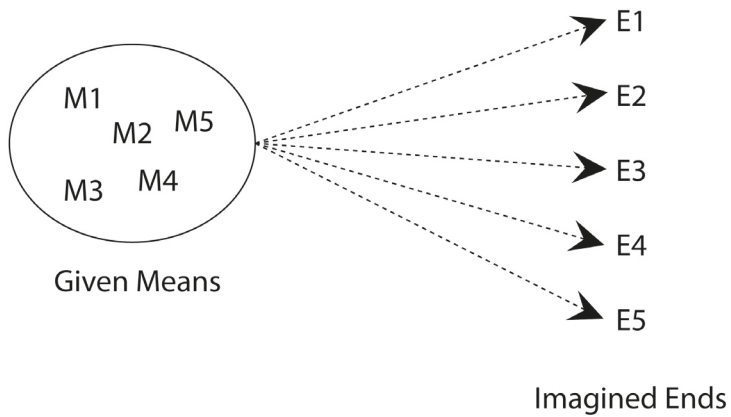
Through my experiences as an entrepreneur, I find that the process model in its simplicity doesn't take into account the social and political aspects of entrepreneurship as much as it should. The literature about the process model and the heuristics in general fails to acknowledge the importance of social interaction as an essential part of creating interactions, finding committed stakeholders and maintaining the continuous cycle. The 'politics' play often a much greater role in companies than they should. Also, the cultural context most likely affects how well effectuation can be applied but this area of effectuation is not yet researched enough.

Despite some shortcomings, the effectual method is still easy to grasp and adopt especially for people without business studies compared to the traditional causal method commonly used in the venture creation. In the causal model, the entrepreneur starts with an idea, writes a plan A, and through selection between the given means including the fundraising builds a business just to notice that the plan A does not work when everything doesn't go according to plan or when the environment suddenly changes. One of the effectuations biggest advantages is the agility to adapt without high costs, a characteristic that is needed more and more in the current business environment. A simple illustration of the differences between these two logics is as follows:

Entrepreneurial Thinking - Effectual Reasoning

Distinguishing Characteristic:

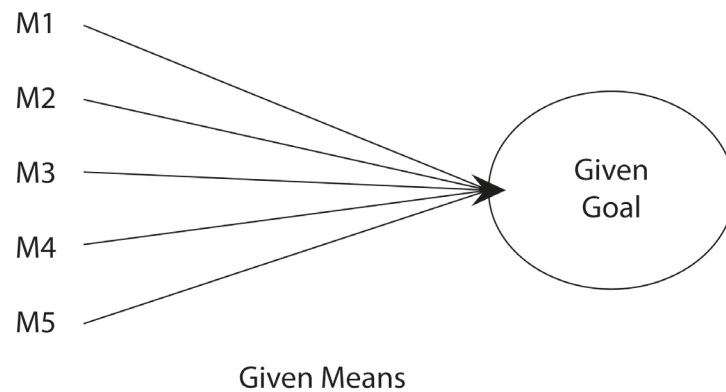
Imagining possible new ends using a given set of means



Managerial Thinking - Causal Reasoning

Distinguishing Characteristic:

Selecting between given means to achieve a pre-determined goal



Read et al. 2011

Even if the effectual and causal approaches are often shown as opposites, they both are integral parts of human reasoning that can occur simultaneously, overlapping and intertwining over different contexts of decisions and actions (Sarasvathy 2001). Also while the causal model is often presented as a linear model and effectuation as a cycle this seems to be a oversimplification of the causal model that can also be adjusted based on the situations that are faced and means that have become available (Kraaijenbrink 2010).

2.1.2 Heuristic principles

The very first thing that actually matters in entrepreneurship is that you have to do something. The action is central to entrepreneurship and opportunities that emerge when an entrepreneur focuses on the resources on hand that are more actionable than those discovered through a market or industry analysis (Fischer 2012). Effectual thinking towards action is that if the first step is doable, entrepreneurs should just take it and after that push it forward with effectual logic even if you don't have proof that your action will make a difference. (effectuation.org) While the process model defines the logic of effectuation, heuristic principles describe a more practical level of entrepreneurship, how knowledge is gained by experimentation, and how "trial-and-error" methods work. These rule-of-thumb principles shorten decision-making and provide a concrete list of behaviors than explain which action entrepreneurs should take.

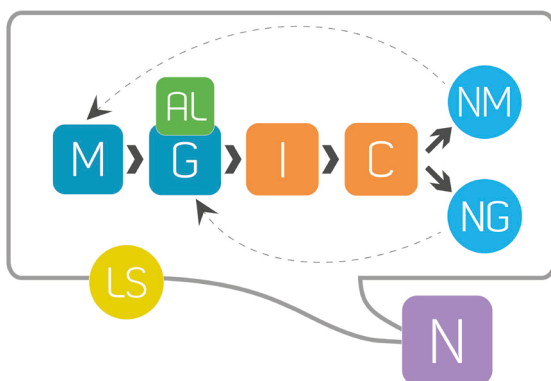
Heuristic principles can be described through five principles of effectual logic:

1. *Bird-in-hand - Start with your means*
2. *Affordable loss - Focus on the downside risk*
3. *Patchwork quilt (Crazy quilt) - Form partnerships*
4. *Lemonade - Leverage contingencies*
5. *Pilot-in-the-plane - Control vs. predict*

These five principles include following elements of the effectual cycle:



THE EFFECTUAL CYCLE



effectuation.org

Besides these five main principles effectual literature lists also several characteristics of effectual thinking that contradict common myths about entrepreneurs. Entrepreneurial potential to act lies in all of us, and it is not an extraordinary phenomenon that must be present before a person can become an entrepreneur. An entrepreneurial mindset is a skill that can be learned just like skills in any other field. The core of the venture is also not a singular mythical idea. It is more important to create an approach of constant development where multiple ideas should not be kept secret

but exposed for co-creation in order to create new means, goals and ideas increasing the element of luck that is part of entrepreneurial success. Effectual literature also questions the role of business plans that don't necessarily reduce uncertainty, but surely prevent unplanned but desirable goals (effectuation.org).

2.1.2.1 Principle 1: Bird-in-hand

The bird-in-the-hand- principle is all about the means and how expert entrepreneurs imagine possibilities based on them. Effectuation shifts the focus from “How to become a successful entrepreneur?” to “What types of ideas and opportunities should *you* pursue?” (Read et al. 2011). This process starts by inventorying your means that are divided into three categories; who I am, what I know and whom I know. Identity (who I am) depends on and is changed by knowledge (what I know) and networks (whom I know) and vice versa (Sarasvathy 2008). According to Read (Read et al. 2011) “Who you are?”- this category includes your tastes, values, and preferences as well as passions and interests. Also skills and abilities and even assets and capital define who you are. “What you know?”- this category includes your prior knowledge and education and knowledge that you have acquired in your job or through industry and previous partnerships. You also possess a lot of knowledge from your life and hobbies and activities and through informal learning. “Who you know?”-this category is connections both in your real life and in your social media networks. Your family, friends, and colleagues are normally the most important connection, but also classmates, university links, acquaintances and even strangers can play a part. “Social media” network is composed of connections in Facebook, LinkedIn, and other online platforms. In a practical level not all your connections are useful for the creation and development of your business, but identifying the skills presented through networks is vital, and can help you also to see the skills that are missing that you should try to connect with.

The bird-in-hand principle provides many practical pieces of advice. First, you don't need to wait the million-dollar idea or clear opportunity to present itself, but you can start with a simple idea and an implementable solution. The main thing is to go for it and take action. Also, you shouldn't run after imagined "fantastic" opportunities that require money you don't have, work with people you don't know and deal with markets about which you know too little. It is essential to remember that means are about more than money and they include not just your, but also your partners means creating together a competitive advance (Read et al. 2011). Besides means and skills, your partners contribute through their unique perceptions of all the elements of building the venture and increase the possibility to succeed.

Besides means that are easy to categorize and list, expert entrepreneurs are also good at spotting and utilizing "slack"- resources that can include anything from waste and empty spaces to skills that have developed besides your core competencies. These slack resources are things that you don't even recognize as resources in the first place, like leftovers from other uses or things simply lying around because nobody has paid any attention to them (Read et al. 2011).

All the available means make the effectual quilt, where particular patches are not the most important thing, but what the entrepreneur does with them (Sarasvathy 2008).

2.1.2.2 Principle 2: Affordable loss

The affordable loss principle is all about being very up front with the issue of how much an entrepreneur is prepared to lose both in terms of time and money exploring an opportunity. This way of thinking and acting becomes a more important part of investing smartly to the exploration of new opportunities as the expertise of an entrepreneur grows.

Many entrepreneurs, especially those who have experience in their field, use successfully causal thinking in their ventures, but this however doesn't mean that predicting the future would not be and remain difficult or even impossible task. As expertise grows, entrepreneurs grow more skeptical of market research that try to predict the environment and the conditions they are operating (Read et al. 2008). Instead of prediction, affordable loss-principle is based on things we know and can control. It can help an entrepreneur to reason through the plunge decision and help to see how to get started right now while managing your risk. Effectuation states that starting the business doesn't have to be over whether the upside is big enough; instead, it can be about whether the downside is life threatening (Read et al. 2011). Goals and actions are chosen so that there is upside even if the downside ends up happening (effectuation.org). The estimate of affordable loss does not depend on the venture but varies from entrepreneur to entrepreneur and even across his or hers life stages and circumstances (Sarasvathy 2008).

The reason many entrepreneurs, especially novice entrepreneurs, still need to make predictions through analytical calculations is that in order to secure financing you need to have the future mapped out through spreadsheets, even it is very understandable that those figures hardly ever turn the way they were predicted. While causal models focus on precise predictions and maximizing returns by selecting optimal strategies, effectuation begins with a determination of how much one is willing to lose and leveraging limited means in creative ways to generate new ends as well as new means. The affordable loss is a sensible strategy to deal with the prospect that the original plan might not work, as is often the case, providing a quick and less expensive route to plan B.

While both causal and effectual models require your investment in the form of wealth, time, reputation and emotion, affordable loss-principle provides a stronger possibility that entrepreneurs can shape the current realities like the limited resources into new opportunities (Sarasvathy 2008). Besides money, time and effort entrepreneurs who think in an effectual way have

often capability to notice and use slack resources around them as well as investments from other stakeholders that decrease the risk. When there is no specific strategy to guide the action there will be room for surprises that can lead them to new markets for their business or even to the creation of new markets (Sarasvathy 2008). The lack of specific strategy and the plan provides also an option to abandon the opportunity with ‘acceptable’ loss.

Experimentation is a low-cost strategy to de-risk an opportunity. In her original study, Sarasvathy found out that expert entrepreneurs preferred the cheapest alternative or came up with a more creative ways of making things happen while pursuing the opportunities. Many examples show that not having the money in the beginning pushes you into effectual thinking and funding to causal thinking. Effectual thinkers viewed themselves as risk averse and cost conscious avoiding large all-or-nothing opportunities (Sarasvathy 2008, effectuation.org) but behaviors associated with affordable loss are applied in all type of companies while it has fostering effect to creativity also in the companies applying mainly causal logic (Fischer 2012).

This idea of affordable loss is logical, but the problem for the entrepreneurs is that supporting systems and financing instruments are very analytical in approach and character. The analytical thinking style that entails and implies presentation and evaluation of data can’t necessarily understand the logic that you invest only affordable means to you venture. Risk taking is seen as a crucial part of entrepreneurship in Finland, and while it may lead to rapid growth in a venture it may also cause huge failure. Even when there are mechanisms in place to loan or invest capital to ventures there is no sufficient safety network when ventures fail. Entrepreneurs who have to close their company in Finland are seen as people who have failed and in the end they bear the both financial and emotional burden. The situation is not helped by the fact that often entrepreneurs have to risk all their personal wealth as a guarantee, and that if the company fails the process to become qualified to receive support from society is almost humiliating. Investors carry their share of the financial losses when involved, but the

stigma of failure is solely placed on entrepreneurs. If a failure occurs at any given point of the venture, the effectuator is likely to lose less in terms of investment than the entrepreneur who invests using a causal logic. The other side of the coin is that the effectuator may not make adequate investment in time to exploit a really large or extremely fast-growing opportunity (Sarasvathy 2008). Research of relating effectuation to performance led Sarasvathy to propose that effectuation may or may not reduce a firm's probability of firm failure, but it does reduce the costs of failure.

Sarasvathy points out in her research three observations about the discovery process and the relation between effectuation and performance:

- 1. The effectual entrepreneur gets to explore more opportunities than does the causal entrepreneur. In other words, effectuation gives the entrepreneur more shots at the jackpot – a larger temporal portfolio.*
- 2. The effectual entrepreneur survives longer so she can win the marathons (although she may lose some sprints along the way).*
- 3. The effectual entrepreneur gets to explore opportunities that are better suited for her. Because lower costs of failure mean more experiments, she fully reaps the benefits of cumulative learning and is better positioned to exploit favorable path dependencies.*

Most of the successful companies start without money or with very small capital relying only to the concept they have. The main point is that you need to know you want to be an entrepreneur and take the first step. When you don't have enough financial means, it is a perfect time to fall as long as you fall smartly. Smart failure means that you don't risk all your assets and destroy your future financially and that you maintain your networks so that you can try again using the lessons learned from the previous failure. Smart failure is also something that you can show for investors. It demonstrates that you are willing to take the plunge, do the doable, and learn from it. When you take the plunge to find the new market it is almost comforting to realize that there is no need to worry, because the new markets are

anyway untested, and it doesn't make too much difference what the time is. Any time is as good as the other to start the venture, but you have to keep in mind that it is still in the end you who is taking the plunge and has the responsibility and that the experiment you conduct has to be still controlled and affordable (effectuation.org). Effectuation is a more experimental way to create a business, but just like any other venture, it also carries risks and responsibilities.

2.1.2.3 Principle 3: Crazy quilt

In the beginning, entrepreneurs are eager to listen to opinions, but only people who actually want to pitch into your venture are worth listening to. Those people who are willing to actively participate by contributing their skills or money are the ones that can become the valuable partners in the venture. Without commitment, they are no more than potential partners with opinions that don't necessarily contribute anything. For novice entrepreneurs picking the real advice from everything else can be a difficult task and even a risk where your venture can get misguided to a wrong direction. Concrete and rational commitment early on in the venture is always better than a simple transaction because it reduces uncertainty and helps to co-create new markets (Read et al. 2011, effectuation.org).

The main difference between causal and effectual partnership is that in effectuation partners are not chosen on the basis of preselected ventures or venture goals, but instead allowed to participate actively in shaping the venture if they are willing to make an actual commitment. In effectuation, the focus is not in the competition but in the creation of the market segment in partnership and then considering the response to competition (Ucbasaran 2008). Committed stakeholders co-create ventures that don't always look like the original venture you had in your mind. You influence them and they influence you (Read et al. 2011).

The special feature of an effectual commitment is that no stakeholder can certainly know his or her exact role in the process (Galkina 2013).

Effectual commitments increase the size of the network and the resources, but they can also add constraints to the actions of entrepreneurs and stakeholders creating a less effectual network (Sarasvathy & Dew 2005).

Once you have chosen to take the action to the certain direction it is difficult to do something else and observe the opportunities along the way. This is especially true for the novice entrepreneurs compared to the experts who possess a certain sensibility to notice things and understand the direction venture is heading at.

Unexpected components that evolve without a clear intention are termed 'strategic blind spots'. These connections that grow through social interactions are strategically important, but they are difficult to include to network development activities because they occur in an unintended ways and may have unexpected outcomes (Galkina 2013).

Effectual entrepreneurs envision the future as a dynamic series of stakeholder interactions rather than crafting a vision up front and then attempting force it or 'sell' it to targeted stakeholders. The people interested can include early partners, customers, suppliers, professional advisors, employees, or local communities (Sarasvathy & Venkataraman 2011). The 'quilt' is typically built in three phases of entrepreneurial networking including activation of existing contacts, purposeful creation of new contacts and network evolution. The entrepreneurial network exist already before the startup and entrepreneurs don't start the actual venture process before they have a reliable network of friends, former colleagues, and family members some of whom are prepared to make affordable loss commitment to you. Active creation of new contacts begins in the commercialization phase through visits and negotiations and evolves through the mechanism of recommendation without the control of entrepreneur (Kock & Galkina 2008). Changes in networking models depend also on the entrepreneurs' personal-

ity, their network competencies, and the nature of the industries in which they work (Galkina 2013).

Effectuators don't emphasize systematic competitive analysis and market research. When the predetermined market doesn't exist, there is little point to do a detailed analysis. Instead of market research effectuators aim to discover what might work through experimentation.

The crazy quilt- principle dovetails well with the affordable loss principle because a number of investment entrepreneurs can lose are likely to be small, it makes sense to work with self-selected stakeholders rather than to expend resources in chasing stakeholder targets based upon predictions of where the markets for their venture will be (Sarasvathy 2008). A growing network of stakeholders helps entrepreneurs to find and determine new markets when the plan is not present and the focus is very narrow. Creating new markets means also not focusing on competitors who operate in the thick of the market. More essential for the effectual entrepreneur is to concentrate on partnerships and first find out can the venture be a successful one or not.

While in a theoretical level the idea of self-selected stakeholders is a valid concept, in a real life this principle cannot be seen as easily as others before the level of expertise when you have something more to offer that attracts people to commit their means without clear reward. Also, while stakeholders and commitment are viewed in effectuation as a positive contribution, being social creatures, humans are also constrained by others. Humans mutually influence and persuade one another to take particular actions but also to refrain from taking other actions (Kraaijenbrink 2008).

2.1.2.4 Principle 4: Lemonade

The lemonade principle is an entrepreneur's way to act as optimists instead of pessimists. This approach towards venture and life can be found throughout the entrepreneurial literature, and even if it might be difficult to measure its effect, successful entrepreneurs tend to always mention it as one of the most important characteristics when running a business.

While causal models seek either to avoid the unexpected or achieve predetermined goals in spite of surprises, effectuation is about exploiting, inviting and leveraging those contingencies (Sarasvathy 2008). Not all the surprises are bad, and they can and should be used as inputs into the new venture creation process and as a source of opportunities for value creation (Sarasvathy 2008). Surprises and accidental events are inevitable, so the best way to prepare for them is to learn to embrace them and to take advantage of them. In order to find new opportunities and markets, companies should create a management style that leverages contingencies or even actively creates surprises (Read et al. 2011). The idea of the lemonade- principle is also to see and interpret "bad" news and surprises as potential clues to new opportunities and markets because they can mark important turning points in the history of the venture (effectuation.org, Read et al. 2011). Failure in business is still stigmatizing in Finland compared to countries like the US, where failing is seen as a part of the learning experience often marking just another milestone towards success.

2.1.2.5 Overarching principle 5: Pilot-in-the-plane

Entrepreneurs frequently use the phrase: "I could never work for anyone else anymore". This is the essence of Pilot-in-the-plane- principle, personal control that allows entrepreneurs to work on the things that they think are important, and about which they are excited and motivated. For entrepre-

neurs experience of personal control is closely associated with freedom, self-direction and autonomy (Read et al. 2011).

The pilot-in-the-plane- principle is about control versus prediction. When entrepreneurs focus on activities within their control, they know their actions will more likely result in the desired outcomes (effectuation.org). Taking action based on your means is more controllable because the resources you need are already in your hand, and also evaluating actions based on whether the downside risk is acceptable gives you more control over the risks you assume. Committed partners, being flexible and embracing surprises also increase control in an uncertain environment (Read et al. 2011).

The logic of the Pilot-in-the-Plane- principle is particularly useful in areas where human action is the predominant factor shaping the future. Non-predictive control seeks to put the entrepreneur back in charge so they can spot the window to unexpected opportunities and manage and outlive the disasters (Sarasvathy 2008). Market research can't predict how and when new markets will exist, or will they even come into existence, so entrepreneurs approach to create the future instead of predicting it, is the most effective strategy especially for new markets and products.

“Causation focuses on the predictable aspects on an uncertain future and the logical premise for it goes like this: To the extent that we can predict the future, we can control it. Effectuation, on the other hand, focuses on the controllable aspects of an unpredictable future. The logic here is: To the extent that we can control the future, we do not need to predict it.” (Sarasvathy 2008)

3 Data collection and research methodology

Researchers agree that more studies are needed to be conducted comparing expert and novice entrepreneurs to get more validation of effectuation. So far effectuation research lacks empirical studies mainly due to the absence of sufficient validating measures (Galkina 2013). This study relies mainly on my own experience, knowledge and perception, and due absence of those validating measures external validation is inherently difficult.

3.1 Research setting and general approach

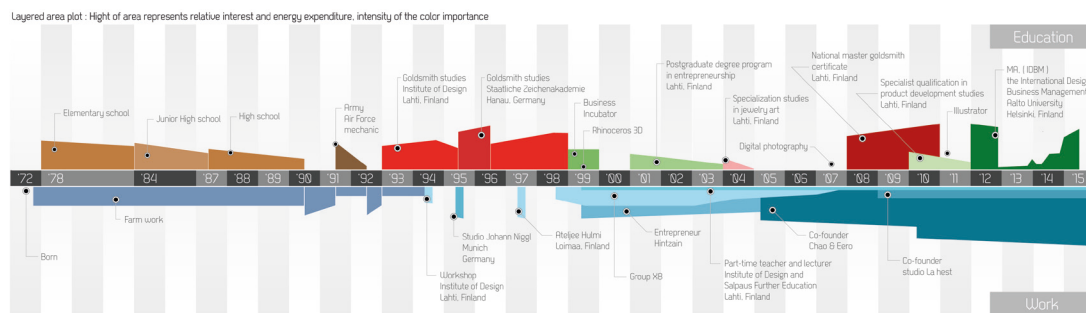
My personal opinion is that effectual reasoning is a useful lens from which to pursue entrepreneurial opportunities. As a micro-entrepreneur my financial means are often limited and all the elements of the effectual cycle and emphasis on experimentation make sense to me while causal reasoning is often pointless due the fact that investments are small and don't benefit from extensive calculations and predictions. Also the effectual way of focusing on action and to experimentation instead of planning and prediction is an idea that I strongly relate to and therefore I see there is value on this study even if it from the academic point of view it might lack sufficient validating measures.

3.2 Data collection: retrospective case study

Data for this case study was gathered by creating infographics of the past and writing down my entrepreneurial story for the purpose of comparing it to the effectual principles in order to find and recognize general effectual elements during my career. Through analyzing my history, I also wanted to identify different points where effectual and causal thinking was implied and reasons for those decisions. Limited interviews were also conducted in order to confirm information about key events that have happened over

the past twenty years as a check on my personal recall bias. The effectual cycle and its elements provided a frame for identifying the crucial elements in development of my entrepreneurial path, and special value was given for the inflection points and the moments where the framework of effectuation and my actions in practice clearly intersected. Inflection points mean in this context points on the historical timeline that have created or changed the direction radically leading to the current situation.

My descriptions of different stage of my studies and work may seem overly detailed, but my thinking for this level of details is to go deeper than just the surface to truly understand the elements that have affected my career. I want to also show through this thesis detailed insights of relations and similarities between design processes and effectuation during my studies and career.



In the infographics height of the area represents relative interest and energy expenditure and intensity of the color the importance.

3.3. Reliability and validity

As with all research, there are limitations in this case study that need to be acknowledged.

Sarasvathy's (Sarasvathy 2008) definition of expert entrepreneur is a person who has either individually or as a part of a team founded one or more companies, remained a full-time founder/entrepreneur for 10 years or more, and participated in taking at least one company public. I meet all the criteria except the last one, but by comparing my first and second venture in the timeline that spans over ten years I still state that the change from a novice to an expert is clear. It is good to notice that unlike the companies in Sarasvathy's research, my companies have not been build to be primarily growth orientated.

The data that is included in this study is selected by me and rely partially on my memory that can be imprecise. Even if I have tried my best to be objective, there is a chance that many of the observations would be different if were they conducted by another researcher. This case study provides insights of an entrepreneurial path and it's limitations open the door for future researchers to make a contribution using the material linked to the framework of effectuation that I have provided. It is good to acknowledge that when all the material is provided by me it brings a certain depth to the analysis that a researcher interviewing me would not have reached in a similar way.

My case study has been mapped as precisely as possible verifying dates and facts from my personal archives and from those people who have shared either entrance exams, studies or ventures with me. Facts related to the entrance exam in Lahti, and studies in Lahti both in 1990's

have been verified through interviewing three of my teachers who have worked in the same department during or in the case of two teachers since the early 1990's.

The amount of detail is vast, but it is those details that build the case study and provide an interesting insight that help the reader to see my point of view and my path as a jewellery designer. Compared to many MA- students in Aalto University in the field of design this case study is interesting due the fact that I have over fifteen years of experience of entrepreneurship and I have both successful and failed ventures that provide material for reflection of effectuation. While focusing on my own case helps me to provide more details this research does not allow observing patterns between cases and it does not aim to generalize the findings to other cases. As effectuation appears to me to be a design infused approach, it is valuable to test whether that approach works for a designer, me.

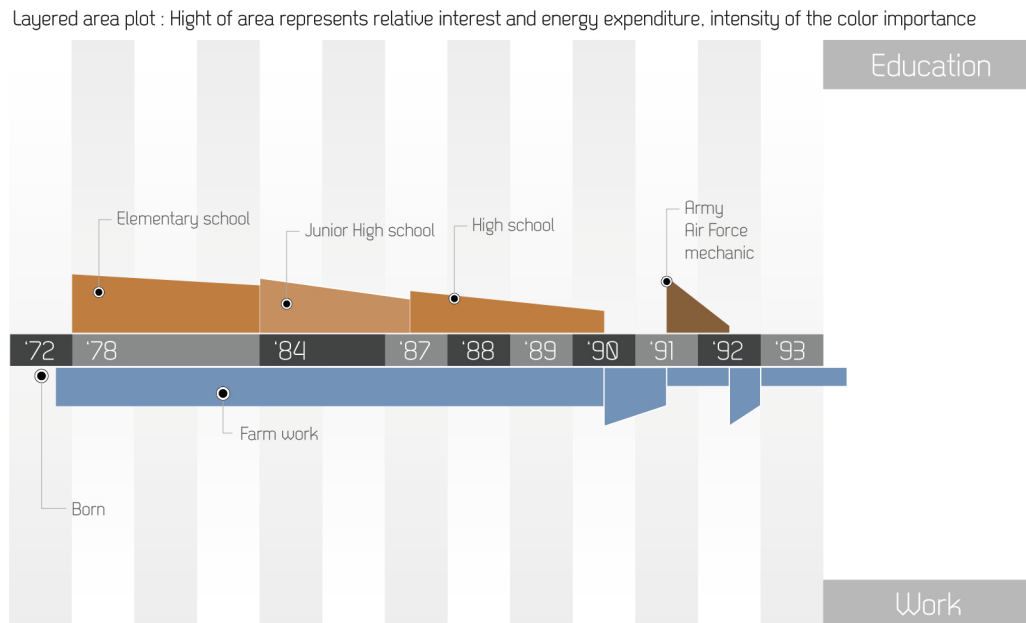
4 Findings

The research of effectuation focuses often on the ventures and entrepreneur's processes of evaluating opportunities. This case study looks even a bit further examining the historical timeline from past forty years. This study maps besides the ventures the means that steered me towards entrepreneurship. Also, the role of the entrance exam to the Institute of Design in Lahti that through research is presented as one of the most important inflection point is analyzed with extra attention.

4.1 Timeline and inflection points

The timeline in this case study was divided into five sections that focus on the major achievements and undertakings. The three main parts that my research focuses are the school in Lahti and the two ventures, X8 and Chao & Eero. My experiences in the Institute of Design in Lahti describes the similarities between processes embedded to design education and effectuation and my entrepreneurial journey from the first company X8 to the second company Chao & Eero how the effectual frameworks functions in practice and how the use of effectuation changes when entrepreneur slowly turns from a novice to an expert.

4.1.1 1972 to 1993



When I observe my nephew and nieces growing up with an overwhelming amount of information and ease of accessibility to it, it's almost shocking to see the immense difference in the environment between 2010's and 1970's life in Finnish countryside. In the 1970's, the main media to gain information were two television channels and a local library with a four digit library card number, that you could just memorize and tell to the librarian whenever you wanted to loan a book or a C-cassette. Besides books and TV, I was blessed with a teacher from third to sixth grade with a talent and enthusiasm for storytelling. My elementary school from first to sixth grade at the point, when I moved to Junior High, had a total of fourteen students with me being in one of the bigger classes including me and two other boys, so there was lot of time to talk and listen person to person. Kaipola- elementary school had only two classrooms, which meant that both spaces had to host three different classes working simultaneously with different subjects. This meant in practice that even if we were supposed to sit quietly and write, we participated actively especially in history classes and sometimes even outperformed kids that were two years older than us.

Storytelling and its nourishing effect to our plays and imagination was one of the most important things I gained from Kaipola elementary school. Even the seven-kilometer trip to school was sometimes an adventure that could take hours. This environment also created the urge to consume a lot of literature on our own time, especially everything related to adventures from J.R.R. Tolkien and Arthur C. Clarke all the way to Edgar Rice Burroughs. The other side of building up the imagination was the group of kids that through real life adventures transferred all those stories into unforgettable moments like inventing a lake monster that caused hysteria in our local beach or deforming a tent stove heater after the cherry red steel started to melt as a result of competition to see who can turn their sleeping tent into sauna. The group was also the safety net during the early adventures in a time when parents did not have time to watch kids non-stop or the capability to call them and see what is happening.

The road to independence for us started from a very young age. I got my first knife at the age of five with instructions to simply ‘not to hurt myself with it’. Also in order to help my parents I learned to work and contribute my small effort for example by driving the tractor even before I was tall enough to push the pedals while sitting on the seat and steering. Naturally at that age also the work and help we could provide was play for us, but it set the path to the creation of a very strong work ethic. Besides work, we had clear chores that were part of life, not something that you got rewarded for doing. What I see as one of the most important factors from my childhood is that very little was provided ready for us. We had the tools, materials, and the environment, and even if there was not much skill to make things, we learned to do what was possible for us.

All the adventures inspired by books and stories resulted in countless tree houses, rafts, dams, and improvised weapons from bows to swords being crafted mainly out of wood. These pieces were not very refined, but just the fact that we were constantly building and making things led to haptic understanding and trained the eye for shapes and proportions. The other thing I recognized that affected my esthetics and visual understanding is

that I collected objects from very small age. As kids, we picked and carried the most interesting stones, pieces of driftwood or even animal bones from our trips and learned to recognize and appreciate the things that appealed to us. These exercises trained our style and taste in a profound way.

The environment you grow up in can bring with it a pressure for certain choices, but even if I was brought up in a farm, I never had pressure to become a farmer. My parents were and are very progressive in this sense. I think their way of thinking was influenced greatly by their rather extensive travels and general approach to life that balance can be found by working hard and looking for things you truly enjoy. For me becoming a farmer was naturally always an option, but I didn't need to think too much about my career choices early on or even during the Junior High School. Because I had no clear direction at that point, the easy choice was to continue in local High School.

In High School, I was first time faced with choices concerning what to study to prepare myself for future professional studies. I belonged to the group of students who had no specific plan or direction so the extra studies were chosen mainly by following the recommendations of study coordinators. This is the reason that I ended reading mathematics and physics that I have no talent or interest in pursuing. I managed to pass both subjects, but just barely. The lack of mathematical and technical talent, and a perfect ten in drawing and arts throughout 12 years of studies made me believe that even if I wasn't particularly handy, I would be able to use my creative skills in one way or another. I wasn't able to make especially fine or delegate works in any field beside drawings, but I had developed reasonably good haptic skills by using tools, especially the knife, and this gave me the confidence to start to look for possibilities in field of arts and crafts. It is also good to acknowledge that at the beginning of the 1990's the job descriptions were very different from today, even graphic designer was a foreign job title that I had no real picture of. I had developed a personal style of drawing from comic books and by mimicking my extremely talented second

cousin who could have made a career as a visual artist, comic book illustrator or graphic designer, but many of these professions didn't in the way exist to us at that time. The understanding of 'professions' was constructed mainly through professions that we had personally encountered in some point.

4.1.2 Application process for Lamk

After High School, I applied the first time to different schools pondering a wide range of subjects from history to drama. I even went to entrance exam in drama school currently known as *Theatre Academy of the University of the Arts* in Helsinki and acting was for a short time a viable option for me. I had after all played and sung in few bands creating an interest towards performing. I was also invited to the entrance exam of *Goldsmith School* in Lahti, which had just become a part of *Lahti Polytechnic (Lahden Ammattikorkeakoulu, Lamk)*. I didn't prepare well for the entrance exam, so in the end I was happy to achieve the sixth reserved space in the line in case those selected didn't accept their study place, and it encouraged me to take a better look at the school and goldsmith studies and to be better prepared mentally and to do better research about the field in case I wanted to apply again.

In the end I didn't get accepted into any of the schools I wanted and worked some time in my parent's farm before my time in the army. It was good that I didn't land a place in any school so I was able to do my mandatory army service away before professional studies. I did my eleven months army service in Kuorevesi and Kuopio as an aircraft mechanic assistant for fighter planes. Even if the entrance exam to the *Air Force Technical School* was mainly about mathematics and science that were not my strongest subjects, I believe I excelled at the psychological test, simple memory tests, and creative problem-solving. This was again an interesting choice for someone whose biggest shortfalls are mathematics and technical understanding. For me, that year of my life taught that I am able to do things that are not expected from me, or that people might even discourage me to do. Getting into the Air Force Technical School was an excellent experience of how to

step outside the comfort zone, and how to manage in a new field with hard work. It also made me see there are other options to explore besides the most obvious choices.

The idea to pursue something new and different strengthened even more during the time I worked after the army doing some odd jobs and farm work. I did some courses including knife making and found out that I enjoyed crafts, and to some extent possessed an eye for shapes and proportions. I also understood that if I can access new means, teachers and tools and have an opportunity to practice my skills it is possible to create objects that have value also for others. The knife making- course also presented me my first place to study in Savonlinna after I received an acceptance letter from school that arranged the education. I had mentioned I needed to find a place to study, and the teacher told me my works from the two weeks class could be accepted as a demonstration to apply. I took this as a joke until the official acceptance letter arrived.

In the spring of 1993 I applied a second time to different schools, but this time the focus was strongly on craft and design. I already had a place in Savonlinna to study metal and craft, and this gave me an ease of mind during the application process when I knew I have at least one option waiting for me. I did recognize that the two other choices, *Institute of Design* in Lahti

(*Lahti University of Applied Sciences - Institute of Design and Fine Arts*) and *Kuopio Academy of Design* (since 2015, *Savonia*) could provide me better and more challenging education.

In Kuopio, I applied to the ceramic department that was at the time organized as a separate line of studies. I already knew that a place in ceramics would also grant me access to study metal and jewelry so for me it was a tactical choice to try to get into the school through the line that had higher percentage of acceptance even if I had no experience with ceramics or glass. The entrance exam to Kuopio was very design orientated and no prior experience with ceramics was required. Besides building designs out of cardboard, drawing skills were emphasized. This entrance exam was one

day long and for me not that challenging even if I had not prepared for it in any special way. I did get accepted to study in Kuopio, and it was a strong option for me due the fact that I had just spent half a year in the city during my military service, and I knew the surroundings and a lot of people there.

But the fact remained that after the 1991 entrance exam Goldsmith School in Lahti was for me the most appealing option due the fact that it was at the time considered to have very high standard of teaching, excellent facilities and also reputation of being very tough to get in. Lahti provided me my first real means test and set me into the path of becoming professional in my field. The tough entrance exam set the level of expectations for the studies; a means test that is quite unique for the design field is one of the important inflection points that designers face.

The application process started by submitting a set of pre-tasks that included drawings of subject “metamorphosis” that you had to present with a set of four pictures and portfolio of works you had previously done. Besides drawings, you had to design and make some objects that were either sent or later brought with you to the interview that was held on the last day of the three-day entrance exam. Objects that you had to build and send included the task “Build a scale to measure and compare the weight of pencils and matches”. You were allowed to use the material of your choosing, but scale had to fit into a certain size package. The other object that was required was a souvenir product for a Wildlife Park called ‘Giraffe’. The product had to be made out of DAS clay inside certain measurements, and the focus of the task was beside product design on how to sell the product and idea for the group of teachers that held the interviews. Applicants were expected to think beyond the object itself, and people did put effort to create also packaging and even promotional material like a t-shirt to illustrate their ideas of the imaginary Wildlife Park. The idea for these kinds of laborious tasks was and still is to see who is really committed to apply and get into studies that require hard work. Motivation is the most difficult or in some cases impossible thing to assess and to teach.

During the three days of the entrance exam applicants had to do some basic tests that focused on working with tools. One of tests was to design and make a labyrinth to a brass plate with a goldsmith saw that had a very thin blade that is extremely easy to break if you don't know how to adjust the tension and how to operate it. I was struggling to make turns with the thin blade, so I ended up making lot of dead ends to the labyrinth that allowed me to back up from the difficult corners and this way save my limited amount of blades so that I was able to finish the task. This task was designed to see not so much technical skill, but do people give up or find a way to finish the task to a reasonable level. Another example of a task that measured hand and eye coordination besides skill to use tools was an exam where you had to bend copper wire to follow certain patterns given to applicants on paper in a short amount of time. Size and shape had to follow the given guidelines as closely as possible. In order to make the task more difficult and stressful wire had been made extremely hard so that it broke if you started to bend it more than once. With this task, the school wanted to see whether people have eye and hand co-ordination because it is much easier to start to build the skills when basics are there.

The entrance exams included writing an essay and drawing both from models and using your own imagination. These exams measured artistic talent, eye for proportions and capability to understand three-dimensional objects, skills that are not as automatic as one might assume. Ingenuity was also tested with a task where applicants had to build jewelry or an accessory out of given materials with no glue so that all the connections and joints had to be mechanical. But one of the most classical tasks was the knife and plaster test that all the students still remember after more than twenty years. A chemistry teacher who had developed his own mixture of glue and plaster prepared everyone a ball of this extraordinarily tough material, and in a certain time applicants had to carve a perfect cube out of the ball to match the given measurements. Knives were sharp and the task required plenty of control, force and muscle strength in fingers and arms. It also required plenty of bandages for many, as the knife was not a familiar tool to some.

This simple test is a good measurement how skills have changed during the times. Basic skills on how to handle tools like a knife are soon almost non-existent for a majority of young students and this presents a huge challenge for the craft and design field currently (Lahtela & Koponen, 2015).

These entrance exams varied slightly during the early nineties. In 1991, I did a version of the plaster ball, where the task was to carve a half ball with a small cube underneath it, into a sort of mushroom shape. I also had an exam where in a tight time limit you had to lift extremely small ball bearings into a sloped metal block with tweezers requiring hand and eye coordination. This task was removed eventually while the only thing it actually managed to measure was ability to work under stress. The ability to understand 3D was tested with a set of pictures that showed drawings of flattened cubes that you had to be able to turn into 3D-objects in your head and answer questions regarding them. Understanding 3D is one of the skills that have declined and many people, including teachers in design schools, think this might be result from flood of information young people consume from screens instead of handling real objects (Lahtela & Koponen 2015). The explosion of additive manufacturing, especially cheap home 3D-printers that everyone can soon access will in future make craft skills to diminish even more.

Imagination was also tested with the simple 'paperclip'- test where inside ten minutes you had to come up with as many uses for a paperclip as possible. The aim was to see how good you are at creating ideas. The quality of the ideas didn't matter, only quantity. I see this one particular test as the pivoting point that made me see goldsmith studies and in broader sense craft and design as a first choice for my future. In the test itself I wrote down 120 different uses for the paperclip. I came up with even more but run out of time. After the test I for the first time got the feeling that this is something I enjoy doing, I have the talent for doing and want to do.

In the beginning of the 1990's the school in Lahti was in transition from craft towards design, and entrance exams tried to balance between these two things that inside the field were seen almost opposite to each other. Many people working in the jewellery field viewed design studies as a hobby that only distracted students away from practicing traditional craft skills. Many people in the field were very old-fashioned and it was clear that a new generation with a new type of education was needed to introduce different ways of working. It is easy to analyze now that the time to get in was perfect for me. I wasn't the strongest in design or in the craft, but my reasonably well-rounded capabilities in all the things required helped me to present myself as a suitable candidate and land a place in the school. My strongest quality was imagination, and later in discussions with teachers they commented that the technical skills are always possible to teach, but capability to see and create ideas and to have curiosity and imagination is something they look for in potential students.

I like to think that I was a good choice for the school, being someone who could fit the changing expectations at that precise time when the education was taking a new quite experimental direction. Many courses changed during the first years after the transition from craft school to more design orientated Polytechnic school. The teachers and the school itself had the mindset that courses and projects will be tested to see what the new direction will eventually be, and a context where also students get to contribute, shape and voice their opinion seem to be very fruitful for everyone. My classmates and I happened to become part of an experiment in motion where the school in Lahti was exhibiting effectual tendencies with the help of changes in educational policies and also due the new generation of younger teachers with fresh ideas and perspectives on design education. It also seems that at that point entrance exams were developed and designed very carefully to select the best students out of all the applicants.

In the early 1980's the school invited almost 200 people to the entrance exams but after the pre-tasks were introduced this number dropped to one-

fourth. In the 1990's, the number of applicants to school varied between 80 and 200 people and based on the pre-tasks 40 to 50 people were invited annually to the entrance exam. Until 1993 twenty people were selected to school per year, and after that amount was cut down between twelve to fourteen students, so the percentage to get in varied from year to year between 10% -20%. The number of applicants declined through the 1990's and is nowadays even lower (Timonen 2015). There are also fewer boys who apply to goldsmith school today (Lahtela & Koponen 2015).

The proportion of boys and girls selected to study when I started in Lahti was close to 50/50 and this helped the purposeful construction of a class so that it had the correct dynamics both between sexes and also between different means and views. In order to do this, you need to have a large enough group of students applying with a good enough pool of talents. A factor that affects the construction of class is that currently it is possible to postpone the studies without a valid reason. This makes the task even more challenging for those choosing the new students.

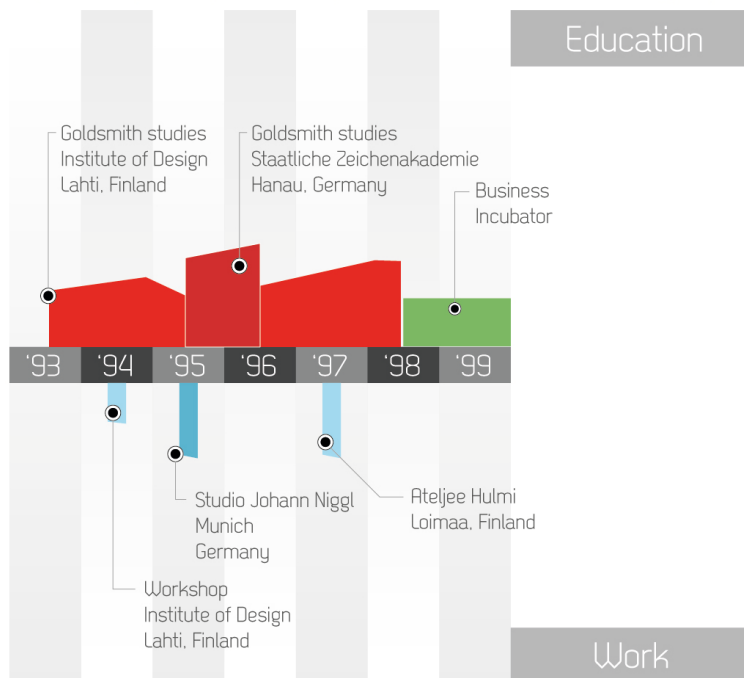
I do think that school was an excellent choice also providing me a challenge where I was able to learn a huge variety of new skills that would build upon my knowledge, interests and basic visual skills and especially eye for shapes and proportions, and the 'touch' a.k.a. the haptic skill. Already the three-day long entrance examination full of fun and creative challenges suited me well. I enjoyed the process at the first time when everything was completely new and unexpected even though I wasn't convinced in advance that the school was right for me. The second time entrance examination in 1993 was a different experience mainly because I had much more confidence even if my preparation happened again at the last moment. The biggest change had happened in my attitude, and this showed in the interview and how confident I was answering questions and presenting my works. My classmates share very similar memories and even if we came from different backgrounds around Finland we quickly formed a cohesive unit with pride in what we were doing. The dynamics of the class worked, and we had

many shared aims and motivation including healthy competition between classmates and willingness to work long hours besides the mandatory studies required. Also, we were able to maintain different conflicting views and have a certain amount of conflicts instead of forming 'cliques' that don't exchange opinions.

Constructing the class seems to be an extremely important starting point for a successful studies and dynamics and this aspect is vital for the whole Aalto University as well as for IDBM (International Design Business Management) which is my program. While IDBM views the potential students especially through the suitability for the industrial projects, it might be helpful also to aim to construct the class as a whole so that there would be even more bonding between the students from the different departments and in the end even better networking that doesn't necessarily happen to the extent that it could at the moment. The difference between studies in Lahti and in IDBM is naturally twenty years of world moving forward and that classmates come now from around the world, which means that after the studies people also disperse to different countries, and networking is done mainly through social media. What IDBM can do as a unit that has a capability to experiment is to focus on constantly evolving boutique teaching and projects and try to house as much strong characters and personalities as possible.

4.1.3 Institute of Design, Lahti

Layered area plot : Hight of area represents relative interest and energy expenditure, intensity of the color importance



Characteristic for the mid-1990's was the positive spirit in school among teachers and students that encouraged hard work. This created a healthy competition between classmates, and the dynamics in the group helped us to achieve much more than what the official studies could reach alone. This time period in Lahti is often referred to as the 'golden time'. Many things were new and exciting and the school was well financed including the budget to have enough teachers and contact hours. The amount of teachers compared to the situation now was about fivefold and there were twice as many contact hours per week. There were a lot of opportunities to create and execute projects also internationally and active development and encouragement to pursue exchange programs in new countries and schools. The official target for the proportion of students doing exchange studies was 50%. The school had also a teacher assigned to help in arrangements.

Excellent facilities, motivated teachers and a time where new things were happening created a certain spirit for the school that is difficult to analyze.

The main characteristic describing that time period in school was 'pride'. Students were proud to get accepted into the school, proud to develop their skills and understanding and learn new things, and proud to create a strong identity, work ethic, and professionalism. The goal was not just to gain something personally, but also to do something meaningful for the field. Goldsmith school was more like a family compared to some other departments with teachers participating in off-hour activities like parties, and students developing many activities from sports events to surprise birthday parties.

The role of creating an identity can be contributed besides studies to other social activities that were unofficially scheduled to annual calendars. New students were welcomed to school through an initiation rite called '*kretsiäiset*' that had some resemblance to fraternity rites including drinking foul drinks and being 'baptized' either by freezing lake water or by fire departments foam and water cannons. As an experience '*kretsiäiset*' was either a passage rite creating belonging to the group or a negative experiment depending on the person. Nevertheless, the goal was not to alienate students but make them feel being part of the group. The shock effect was softened by parties attached to three major events, arrival of new students, Christmas or old students leaving the school. At this moment, many of these traditions have disappeared but there are some systems still in place to encourage students to show their skills and interact besides official studies (Lahtela & Koponen 2015).

The school provided same basic studies for everyone during the first year, and after that students were allowed to decide do they want to focus on goldsmithing, silversmithing, engraving or jewelry design. The first year included general studies, basic studies in jewelry technics and visual studies in drawing, color theories, sculpting and other very fundamental fields for any designer. The creation of this strong base was essential for the development even if at the time the majority of first-grade students would have preferred working only with the actual materials and creating jewellery and objects.

After the first year, the group that had started together was divided into different classrooms according to their studies. For goldsmiths, classrooms had also a kind of hierarchy where you advanced towards the last classroom in the third floor. Engravers and silversmiths had their own rooms throughout the studies and there was even space in another building for those who preferred a quieter or more personal environment. Different spaces developed their own dynamics, so the space you were located in also affected your time in school, how you set the targets, who did you befriend with, and how close to the center of the action you were. Many things were still shared between classrooms through friendships, courses, and projects. From the networking perspective, this was a very important detail, also due to the friendly competition between students in the classroom that made you push your skills beyond the official curriculum.

Besides the official criteria for studies, our classroom had their own unofficial systems to activate people and boost the dynamics of the group. Two famous systems from that time were *'early bird'*- and *'poropeukalo'*-awards that were created among students. The *'early bird'*-award was a simple system where whoever got to school first in the morning got a line to the chalkboard as a point. This simple system competing over points did motivate people to come to school early. Even if it sounds like a minor thing, it is a fact, that there have been during the years students and even classes who from various reasons have developed a habit to showing in late and undermining slowly their own motivation and level of their capabilities they had time to reach.

'Poropeukalo' (a Finnish word for ham-fisted) was a trophy that was awarded to the person who gathered most the other type of lines from being clumsy, having accidents or screwing up during the certain time. This trophy could also be awarded to a teacher. The rule was that failure had to be great enough to qualify to have a line. Voting happened inside the class and was in its own peculiar way almost an honor. Negative things were turned into positive learning experiences about safety, workmanship or any

other matter related to those incidents. This type of actions strongly resonates with the principle of leveraging surprises. Paying attention through a positive view of point to the negative events and learning from them is a normal part of the design processes inside the design schools. Experimentation and failures are always part of the process, and all designers and craftsmen have memorable stories of failures to tell.

The important factor supporting learning in the mid-1990's was the existence of workshops during evenings and weekends that allowed students to work outside normal hours. Those who used all these extra hours were able to use time up to 80 hours/week in school, which is a huge difference to the situation now where students have only five working days and need to leave premises at four or five o'clock. Workshops had a supervisor, but working was otherwise independent.

The school had in place many clever systems to support hard work and quality. One simple rule was that all the works made had to be presented publicly to an audience normally by building a small exhibition in the lobby of the school. Even if these small exhibitions didn't necessarily reach huge audiences they pushed students to create good works, and also to arrange and build exhibitions as a team. Students had to also plan, build and execute fairs and international events that provided opportunities to learn project management and to communicate with the outside world. Also, the small events like Christmas sales that are common practice in many design schools work with the same principle. Students have to plan not just the products, but pricing, packaging and even branding in a small scale. Exposing you and your designs to the public is a first step for many to open up to groups outside the own cliques. 'Doing the doable' in a form of small actions resonates strongly with the effectual framework.

For me, these exhibitions that included a display of works from a Master class set one clear goal during my studies. I decided that I wanted to reach at some point of my career a *National Master Goldsmith certificate*, which I was finally able to achieve in 2010, almost eleven years after finishing my BA

studies in Lahti. The National Master Goldsmith certificate is based on the old European guild system, and it is one of the strongest links to the partially forgotten traditions in our field. Currently, there are around one hundred people in Finland that have earned the certificate by passing the exam where you have to demonstrate your skills as a goldsmith in order to call yourself a Master Goldsmith. In the exam each person designs and makes a piece that shows the means he or she has, and three experts, who all are people with Master certificate, decide is the quality of the design and execution high enough.

The first two years in Lahti were a time that I learned the basics for my profession, but towards the end of the second year I started to question some of the choices I had made. For the second year I chose as my main subject engraving, and as interesting as it was, I slowly grew more and more doubtful if that was the path I wanted to continue. A big part of my uncertainty was our engraving teacher who did not commit to our studies as much as he should have. I also became slightly bored with my studies and realized I needed to find again something to excite me before I start to look something outside jewellery field. After looking for the solution to find again something new and exciting I decided to apply to exchange studies. My first thought was to apply to England where several students had been mainly because of the language, but in the end Germany and a school in Hanau (*Staatliche Zeichenakademie Hanau*) started to look as a viable option. It is good to remember that at that time there were no websites, blogs or videos to do research about schools. I actually got my very first email address when I went to study abroad. I got the recommendations from teachers and those few students who had been there. For me, Germany was once again an opportunity to jump into the unknown, and because the autumn season was only about three months, the risk seemed quite acceptable. I prepared for the school doing an internship in Munich with almost non-existent language skills that technically would have prevented me taking part into this combination of language studies and internship. But since I was very determined to go to Germany I fought the school and won the right to go

by convincing them that I can manage myself, and possible failure will not be pinned upon the school.

I spent the summer of 1995 in Munich working in a small jewellery studio and that first experience living abroad changed me more than I ever expected. Besides the work and new skills gained I exposed myself for the first time to the overwhelming amount of culture Munich was able to provide. I went to see a vast amount of collections of classic art in major museums and became passionate moviegoer. At that time there were about 60 – 70 movies playing every single night in the city. I became familiar also with alternative movies, like masterpieces made by *Ed Wood* and the like, and I also got quite serious about collecting vintage and design articles because of many extraordinary flea markets held around the city during the weekends.

The group that worked that summer in Munich was made out of students from different departments. Even if I don't keep in touch with the majority of the people that participated in this summer program, I have one important connection born from that experience.

After Munich, I returned briefly to Finland to prepare my exchange studies in Hanau, Germany, where I started my studies right after the summer. Hanau is a small town close to Frankfurt am Main, and a very different area compared to the relaxed atmosphere of Munich. These studies once again matched the definition of experiment or adventure after I moved there to study with no place to stay and with very limited language skills. Summer in Munich had taught me some basics of German language, but at its best my level was barely just enough to survive. I had decided in advance what to study, but many facts related to school and studies were blurry for me at the point I was already standing in the train station of Hanau with my luggage.

This new environment was a bit of a shock after the relaxed environment in Munich, but the school itself had a nice atmosphere even if certain routines and teachers were traditional and rigid. I gravitated quickly to-

wards the most innovative teachers and courses since I had the possibility to choose my own curriculum according to my liking. This allowed me also to participate to classes with first graders and those who were doing their Master studies. People on Master classes were goldsmiths who had graduated and already worked some years, so I basically had a room full of teachers at my disposal with many different styles and views. Hanau presented me an opportunity to concentrate purely to studies when I had very little if anything else to do.

I enrolled in some short courses mainly goldsmith techniques and design, engraving and a subject called '*Gestaltungslehre*', where the focus was to see, build, draw and understand important elements like shapes, proportion, and colors. I was fortunate enough to have Mr. Hans Michael Heynen as my teacher before he retired. Mr. Heynen was a charismatic and legendary character whose impact to the creation of proportional and geometric style in German jewellery cannot be underestimated. '*Gestaltungslehre*' included a lot of short and long exercises where we either drew or made simple 3D objects out of paper or cardboard to see thousands of variations between the students of same themes in order to train our eye. These studies were priceless for me and I credit them for honing a skill to evaluate and create balanced shapes in objects I make.

Even if I had become hesitant about engraving, I decided to study it still more in Germany after I learned that I have the freedom to do whatever I pleased inside the classroom. I was taught by an engraving teacher, Mr. Hünensen, who inspired us constantly with his professionalism and stories of his adventures from the caves of Africa to casinos of Las Vegas. The engraving lessons made me once again enjoy engraving, and I spent a lot of time drawing and making metal graphics. I continued this technique later as a hobby for several years after returning to Finland. This class allowed me to focus on drawing the comic-style characters that I had been drawing already as a six-year-old school kid. After the studies in Germany, I kept this style actively as part of my work until 2010.

But in the end the most important part of my exchange studies were the goldsmith and design classes together with a room full of graduate goldsmiths from around the Germany doing their master studies. My teacher Mr. Zickendraht had the skill to extract the creativity from each student in various ways. With me, the technique was to draw endless amounts of designs to the point of exhaustion where I felt that I simply didn't have any more ideas left, own or borrowed. After several days doing this same mentally exhausting exercise happened what my teacher knew would happen. I started to create completely new and different kind of shapes and ideas that are the base for my artistic work until this day. When analyzing afterward it is easy to see that these sharp and aggressive shapes are born from all the nature objects collected as a kid that I had never before brought to my designs. I had carried these shapes with me, but it took this exercise to access this repository of ideas and start to turn them into characteristic objects that are either jewelry or sculptures or both.

After the studies in Germany, I continued for a long time to develop two very different styles. On the one hand, I made comic style characters inspired by the drawings from engraving class, and on the other, dark and aggressive pieces from my design class. The simple comic style fitted better for the commercial pieces that require faster manufacturing whereas the darker style required bigger objects in order to keep the style uncompromised by using bigger volumes and much richer details that made the pieces more like the sculptures in a higher price range.

Even if my original plan was to stay in Germany only in the autumn, I ended up studying there one year. The autumn season is very short in Germany and I understood that if I wanted to really gain new skills I had to invest one year for these studies. After I received official permission from both schools I returned after Christmas holidays to Hanau and continued working with the same subjects the whole spring semester. In hindsight, this was clearly the correct solution to gain as many new means as possible from the investment I made. My studies in Germany were the second important in-

flection point that set me to a new direction that would have not happened if I would have stayed and studied only in Lahti.

When I returned to Lahti in August 1996 I decided to continue from the third year studies extending my four-year plan with one extra year. This was the easiest solution so I didn't need to miss anything or rush through the rest of the courses. In practice, this also meant that I did the last two years of my studies with students who started at the school one year later. This was naturally a big change, but anyway everything had changed while I had been away. The school had lot of big events including a small 'rebellion' including demonstrations against changes in education, and naturally this and other events had changes the dynamics in school and relations between my classmates and other students who had gone through all of this

I was essentially 'out' of everything that had happened, and the last two years I faced constantly stories and discussion that I could not be part of. But whatever was lost in the interaction between me, and my classmates was replaced with new contacts from people that I now shared the studies with. On my own mind I felt that I was the last two years in between the groups, after all I had left my original class, and joined the new group when they already had two years of history together. This did not bother me that much because year in Germany had made me appreciate being mildly outside the groups doing my own things and appreciating my highly introverted nature that likes the environment where I'm able to keep a certain distance from others.

My studies continued normally, and I used a lot of elements from my time in Germany in all of my works. The year abroad created my style and gave me also a new perspective and confidence to make more products that could be recognized as mine. One new addition after Germany to my weekly life was also the even more active habit to collect things, especially design from the 1960s. I had started collecting during the first two years in Lahti and continued it in Germany that provided excellent opportunities. After returning to Finland I kept collecting and learning more about design,

and at the same time training my eye and building my aesthetics for shapes and propositions while doing sound investments.

Besides compulsory school works, I started to make more systematically small sellable products using the comic book style. I created a lot of different characters and had all the time a small stock of jewellery next to my station in school.

This time was naturally the beginning to becoming an entrepreneur; after all products required all the same elements you need to create as an entrepreneur. Even if the supporting layers around the pieces of jewelry were simple I did develop first collections, my own packaging, a system for pricing and other required elements. I was more interested in creating my own products than practicing purely the techniques, and this also led me to a certain direction in my work after graduation. But at this point making my own creations became the most important thing for me professionally, and the ideas gained from Germany started to push me into a new direction compared to the traditional form of working as a goldsmith.

Towards the end of our education in Lahti we had one or two entrepreneurship courses, but they included only the basic things and focused on to-do lists and supportive structures instead of ideas, concepts or even business models for ventures. Studies during the school didn't support in any special way growth of entrepreneurial understanding or mindset, but the spirit in the school and support from the teachers and other students gave us the courage needed. After all, if you look only the numbers as a small novice entrepreneur building a micro company, in many of the cases the end result is that you probably shouldn't even start a company. But the mindset, supportive environment and unofficial steering towards taking small entrepreneurial actions are elements that build a positive view towards entrepreneurship. One issue with the building of entrepreneurial mindset is that the skills the teachers, the visiting alumni and the outside lecturers can vary immensely and if students are provided with just only one or two

entrepreneur courses they may get the best or the worst there is. I personally witnessed a lecture by a famous jewellery designer during my studies where the message was that his success was the result of pure luck and entrepreneurship in the jewelry field is hopeless. Luckily I didn't let this affect my decisions, but for some it could have been the pivotal moment where the plans of entrepreneurial future could have been crushed. It is still good to hear stories of failure and hardships while those present realistic view of entrepreneurship and provide excellent learning opportunities when analyzed correctly but negativity can easily be infectious.

In my opinion one key to provide realistic picture of running a company during the time in school starts from the teachers who have real life experience and can answer the questions and help to set the direction for those who plan to build their own venture. Teachers have also the role of setting the bar for the plans. If teachers are happy with performances that are enough, it builds the assumption for the students that work earning good enough grades in school are good enough when doing the business. For us, the bar was set very high all the way from the entrance exam and while the comparison to others was done internationally we were able to benefit from this approach later on.

We were encouraged by teachers to make and sell jewellery as soon as we were able to craft them. We made jewelry first for our family and friends, and soon after that to any interested parties. The school even provided customer works to students that were learning experiences including real life problems to be solved in a set deadline. The idea was not to wait that we are perfect but to do things right away and learn not just technical things but also how customers think and see the jewellery, values related to jewellery, and also the importance of interaction and customer service. These entrepreneurial tasks and exercises inside our own field provided us much more than academic business studies that we felt were almost a foreign language to us. Ideas of entrepreneurship were intertwined to action that was born from the motivation of teachers and financial possibilities

to test and make things happen. When our skill grew it again contributed positively to confidence and entrepreneurial thinking. On the other hand a focus purely on our own field made us see that designing and making the jewelry is the only direction, and our views became to some extent limited for the opportunities outside our own field. Very few of my classmates planned to build a strong growth business but more a company that can help them to support them and earn a decent living.

Business studies today in Lamk are to some extent more advanced and include tasks to create an imaginary company as a team. The school also brings outsiders and alumni to teach and tell real stories and provide advice so that the students have more channels to get the information about the entrepreneurship in a practical level. In the Institute of Design people still possess skills to make objects, and this combined to venues linked to school gives an easy starting point to understand the chain from designing to manufacturing, marketing and selling. It is still from my opinion easier in a BA level to start from this type of action rather than from new concepts, radical innovations or completely new business models, which are things you more likely are able to define during the MA studies. The roots of design are still in arts and crafts and I think they should be so in the future too even if techniques like 3D- printing provide many exciting new opportunities. Basic skills with tools provide designers the best and fastest route to test and prototype, and already now the ultimate luxury items are the ones that involve skills from those few people who can still create something with their own hands. This iterative design process can also form a strong base for effectual mindset when students start to build their own companies.

Lahti Polytechnic faces many challenges compared to the situation in the 1990s. Resources have been cut to a minimum and there is no more possibility to construct the classes while the people applying have a very different level to start with. If there are no skills that have been built before BA level, it is often impossible to train them in four or five years. And if

the level of resources and teaching goes constantly down, there is a serious risk that small marginal professions like goldsmith will cease to exist in the level they should be. Professional studies can easily turn into courses that provide people only a hobby. When there is no resources and the design and craft education suffers, also the business education attached into it can become only a light add-on increasing the risk that companies become small hobby businesses with no real value. In a BA- level focus of business studies seems to be still in transactional things instead of matters that are important in order to build a viable business.

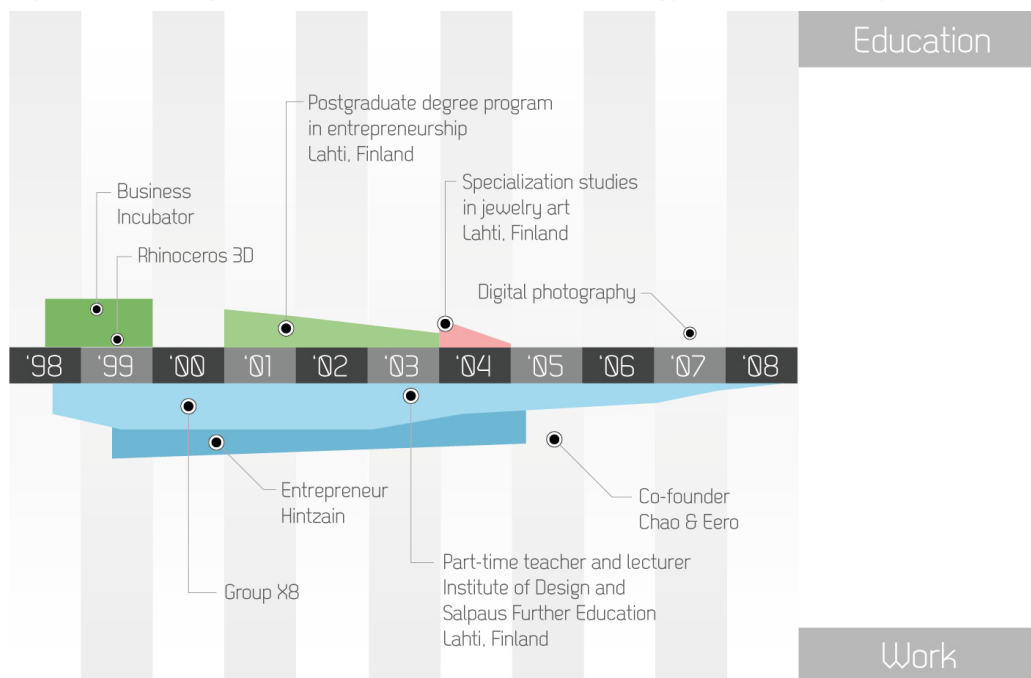
For me the time in school that I developed the idea of my first venture was effectual. Means contributed to goals and interaction and commitments helped to establish new means and goals. The system as a whole just worked perfectly very much in the way effectual theory does in its simplified form. The main means I acquired and developed were naturally the craft and design skills related to jewellery making, but also the confidence and bravery to take action and work independently were important so that we were able to start our business. Networks that formed my first venture X8 and also the school's network supporting us were all built during the studies, and they were the key things besides the skills that helped me to take the action and become an entrepreneur.

What we did was based on experimenting and exploring the unknown instead creating a familiar well planned and calculated system. We aimed to create something different from the norms of the industry. School taught us how the design process works and how risk taking, experimentation and surprises can provide opportunities beyond official requirements. All this was strongly based on our strong identity as designers and craftsmen who had a portfolio of skills that allowed hands-on activities on daily basis. It is a bit ironic that this system took right away step towards causal thinking when the company started to turn into reality and required 'serious' thinking and contacting the financial institutions. As novice entrepreneurs, we had no understanding to create a system that would have kept the ef-

fectual way of thinking and developing alive. The focus after this point was strongly on a causal model where the prediction was favored over reacting creatively to contingencies. The limited amount of business studies and the advice from business incubator changed the direction even more towards causal thinking and were in this sense almost counterproductive to our venture. In retrospect, this change in our thinking can be observed but at that moment we did not have experience or understanding to fully use the opportunities our education had provided us. We lacked the correct network outside our own circles that could have helped us in the transition from school into entrepreneurship.

4.1.4 X8

Layered area plot : Hight of area represents relative interest and energy expenditure, intensity of the color importance



The school supported in the 1990s the idea of students creating something new and meaningful for the field after they graduate, and one of the biggest creations in those years was the birth of *Union Design*, a company based in Helsinki, that had many of my old classmates involved. I heard about this project very late during its development and was never either thinking about it or asked to participate. Union Design was a new type of company. A group of goldsmith and businessmen combined was the most advanced

answer to the question what type of entrepreneurship students with a new type of education could pursue. The owners ran the company with both business and some engineering backgrounds, and in its early years it was an example for everyone else receiving a lot of attention and appraisal. Despite the early success the company had it's own issues and at some point the original group dispersed completely giving birth for many new companies where goldsmith were able to have control of their own work, creativity, and future.

Cull (Cull 2006) explains in his article how the different entrepreneurial routes set companies in different paths right from the beginning and how the novice entrepreneurs just like we were are motivated by freedom, recognition and a sense of achievement instead of just growth and the financial gains. Out of the three types of business start-ups, the job option/survival business, the lifestyle business and the growth business, the direction our venture took fell clearly under the job option / survival-category, while there were no jobs matching our design education. The example set by Union Design and the general idea of creating a new way to work in the field as a group launched the process to gather another project that eventually became *X8 (Kultasepäalan Osuuskunta X8 / Group X8)* based in Lahti at the end of 1990's. A few people entertained the idea of a group that would rather locate to Lahti than Helsinki while they had either a connection to Lahti region or felt that the city had room for this type of company. The support of the school could provide was also an encouraging factor that helped to reduce the risk in the beginning. We were able to loan certain tools and rent both space and access to the bigger machines reducing the financial burden in the beginning.

The serious planning started about a year and a half before first members of the group graduated and was in the beginning kept secret to have space to work with the concept. The number of participants was set at five, although in the beginning there were two other persons besides the five founding members to meet the requirement of seven members to establish

a co-operative. These two persons did not participate actively in running the company and later on left the company.

The five members included a person with business studies and financial knowledge from her previous work combined to goldsmith studies, a person with goldsmith studies and strong technical knowledge, a silversmith with experience from sales, a designer with goldsmith studies and me with my background including goldsmith and engraving skills. We viewed this group as a good combination of different approaches and skills that would support the development of the company. The original five members graduated between years 1998 and 1999 and planned the company with varying intensity before the opening of the workshop and store in 1999. The age difference between members were more than ten years, and backgrounds before school varied from long working experience and changing life career all the way to just High School and army.

In effectual terms, stakeholders are selected around the process how they get involved in, not just around the actors that form the network, but in our case we did not have the vision to reach further than inside our own small circles. We were also not able to evaluate the different characteristics people had. While some of us were analytical by nature, some were more experimental and after the first years this difference started to grow as an issue.

The main thing still was that we did take action. Starting with means provides for entrepreneurs three clear advantages. It lets you get going right away, it gives you advantage through your unique means and it lets you get going inexpensively (effectuation.org). Those effectual principles were adapted also in our case. Even if the X8 turned in the end to an overly complicated system that held us back instead of helping us to move forward it had a very important place in the historical timeline, because it started our entrepreneurial path. We did not have financial means or capability to do very deep analytical assessments, so the only way to make something happen was to do the doable using the means we had. The money we had

in order to start the business was comprised out of equal small investments from everyone and from the loan from the bank with the guarantee given by Finnvera. Loan helped us to start the company, but it can be argued that it also affected the direction of the company in the very beginning while we didn't have the resource constraints to force us towards more creative venture building. Still in the end the financial side wasn't the crucial thing compared to the lack of clear goal setting and strong emphasis towards analytical mindset.

The biggest difference between the concept of Union Design and X8 was also one of the biggest failures in our venture. Even if we had a person that had worked for a long time in a company outside our field and had skills to calculate and present things in a clear analytical way, we lacked the know-how in entrepreneurship. None of us had practical knowledge from previous ventures, and many even small day-to-day issues were new and taunting. The beginner's enthusiasm to tackle the more fun things like branding also made us fail to see several more crucial things like the importance of continuous and well-planned marketing. The development of a business model stopped gradually after the shop and studio were opened, and all these things combined to personal conflicts contributed in the end to the downfall of the co-operative. The self-selected network that was the original core of X8 was formed through the deliberate action of an existing network with regard of achieving a predetermined goal using causal initiation. Effectual initiation where network sets to imagine ways to exploit an extant network and deliberately find new committed stakeholders didn't take place outside the group of gold- and silversmiths and people from different organizations that can't be calculated as committed stakeholders. There was at no point an idea that the group would be built as a cross-disciplinary organization. When stakeholders were selected, it would have been beneficial to gather a broader pool of talents and means in order not only to grow business more rapidly but also to have a greater chance to find new business through broader networks and have working effectual cycle to take the original concept forward. The lack of effectual approach meant that we

could not see business ideas outside making and selling jewellery. Even if we started as a creative entity the requirements to build a business forced us to adopt a causal way of thinking and we lost many effectual ways of working that we had learned in school. There was no system outside the school to support effectual thinking, and as novice entrepreneurs we had too many things to deal with, and too little understanding of business to realize this type of abstract things, no matter how important they were.

When this venture is analyzed now it is easy to point out many things that were done without sufficient knowledge under the illusion that causal thinking and planning is the only road to success, but on the other hand, we did take the action, and that action has in the end led to the current situation and business. What we critically needed was a mentor or mentors with long-term commitment outside our own field who could have helped us to invest more to the creation of the new type of business build on our new education and views. It was a good thing that we did not have more money to spend while it is very likely that we would have achieved more or less only the same things using more expensive ingredients. Money alone would not have been the answer or the way to better business at that point.

Our group was composed of people with similar skills and shortcomings, but we did naturally get help on the fields that were alien to us. The Polytechnic School of Lahti, of which Institute of Design was a part, had established a business incubator that provided assistance to new companies like us. We were able to get advice and support and our first office was located in the business incubator. We had no possibilities to establish production facilities there, and for example I worked in my own living room with whatever tools I had bought during the school. Importantly the incubator gave credibility to our venture and helped to establish connections to bank, insurance companies and to Finnvera to get funding and in this way played a major role that allowed us to create the venture. We also had access to many consultants with small fees through different government programs, but I see this kind of short consultations to novice entrepreneurs to be

easily counterproductive. When people with experience tell to eager novices advice that are based on averages, instead of being adapted to specific cases, new entrepreneurs can take this advice too seriously and push them as a part of their business only because they feel consultants are authorities worth believing.

The aim of X8 was to establish a suitable space combining workshop and store where we could sell our products. The concept followed the popular idea of the time where customers were able to see from the store to the production facilities creating an experience that made the company different from normal jewellery stores. The idea was also to create an organization that could take care of the marketing and have more visibility than small individual companies alone and later on expand to sell products from people outside the co-operative or even taking new members. We were determined to create a workplace for us with new kind of possibilities that would match the new type of education we had received after traditional school had changed from craft to design education with strong emphasis in internationality during the 1990s.

X8 was founded as a co-operative and all five members had their own single person trade name. This structure was created after strong recommendations from different organizations including the local *Co-operative Centre in Lahti*. The renaissance of co-operatives was strong at the time and we were eager to claim the title of first goldsmith co-operative in Finland. Different organizations were eventually supportive of our idea, but at no point were there people to help us to really go through our concept and business model. It often seems that as long as someone is willing to take the risk and start a company that decision alone is viewed as a valuable thing, and possible problems are pushed into the background. Both the Co-operative Centre and Finnvera evaluated our concept but solely we did the development of that concept and business model. The core logic of creating and capturing value was never calculated with realistic figures or with the help of someone who had a strong commitment to check our plans through.

Enthusiasm seemed to fill the gaps in logic and planning, and we got green light wherever we presented our idea in Lahti. The means we were provided with were mainly financial and basic advice in setting up a business that were valuable but not very perceptive. There was no real commitment from any institution providing support for us besides the help school and teachers provided us in order to see new companies being born to the jewellery field helping the field itself to renew.

When X8 was created a causal model to present everything with numbers was as it is today the official and 'right' way to plan the venture and present it to business incubator and those who were involved at guaranteeing the loan and loaning the needed capital, mainly bank and Finnvera. Our calculations based on our predictions without any realism for the next five years were more important than the idea of our company. Since there was only a one person with the skills required to run the financials, she gained a different position inside the group, and this pushed the whole venture into a certain direction.

The business model for X8 was very simple, to design and make jewellery. The only innovation was the structure itself. The center for co-operatives was very interested in our structure and we were used as an example in many of their publications. This structure and especially the financial side and responsibilities of it were adjusted countless times. What in the end was new was the idea and possibility to become a hub for a broader group of people on the field and the creation of the platform as a business. This innovation was eventually pushed into the background and never turned into a viable source of income. The time would have been right to create and grow a combination of recognizable brand, stores, exhibitions, marketing platform, and online platform that could have charged annual fees to members according to how much benefits they would have gained from the organization. But after becoming overwhelmed by everyday realities there was no more room for business development. Our work with the jewellery was what we did to earn money and entrepreneurship was almost a separate

thing that became just a set of analytical tasks. We lacked the skill to see the big picture, mainly how to create new kind of core logic and create and capture value with it. This also prevented us later on developing the company when we started to focus on improving individual elements instead of the company and our business as whole and turning the original innovation of the structure into a source of income. Even if we failed in many things it is good to point out that we did work extremely hard to succeed, and several things that we didn't achieve were simply impossible for us considering our understanding, means, and the environment at the end of 1990's that was very different as it is today.

Effectual research often points out that expert entrepreneurs don't believe in market research. The basic market research was also conducted to help X8 to get information about the competitive environment, but this market research had very little real value for the development of concept or choosing the market. The report identified the biggest companies in Finland while competition in Lahti for the co-operative was mainly other small workshops or products and services from other fields that competed for the same customers.

In the beginning, we aimed towards the tipping point where we would be able to pay the bills and also slowly start to pay away the debt. Because we had very little financial means right after the school, change in the income didn't matter that much even if the financial pressure was constant and led to momentary breakdowns among the members. This is where the group served its purpose by providing support to members so that they didn't have to battle the hardships alone. Loan and investment in the beginning by each member was calculated so that if the venture would fail we could still move on to do something else without crushing debt. Investment from each member was around 7000 euros and we were able to coordinate and purchase a good set of different tools and machines to start with. Even if this investment sounds like the 'affordable loss'- principle, it was calculated purely using causal logic; how much do we need money to start the busi-

ness, survive a certain time if the income doesn't follow the prediction and also what is the amount that someone might lend to us. X8 was not meant to be a test that could be ended quickly in order to build something better, but rather a long-term operation with a focus on building a brand and growing a business with a new touch so it could support the five original members. This plan to build a system to provide us living and funds did work, and in the end when X8 was dispersed we had reasonable amount of funds to divide among original members that helped each one to start their new businesses. All five members still work as entrepreneurs.

In a practical level tight budgets contributed to effectual actions and to seeking opportunities using the means we had instead of money like participating to many events in Lahti and the way we were able to promote us for free in press by presenting us as a very different kind of company compared to the other businesses in our field in Lahti. The effectual action happens along the causal all the time, and all the experiments to increase the turnover and grow the business cannot be viewed as effectual thinking. After the beginning, we were bound to causal thinking, and the tougher the situations got, the more we seemed to focus on numbers instead of creativity. Bad planning and lack of experience led to the typical situation among small companies where we were able to pay the bills, but couldn't invest in marketing or the development of our facilities and production capabilities. Difficult times did make us work as a group and think through possible solutions together in the beginning, but this changed eventually after we started to grow our business and have time to do things besides just focusing on survival.

Eventually, there came a turning point where the limited pool of means didn't anymore contribute to collective creations of improvements for co-operative or new ideas. The system that helped us to start the business didn't anymore bring benefits but instead burdened us with unnecessary structures. After one of the members brought to the company a rather large order from a big company at 2002 that helped to stabilize the finance-

es, everyone started to slowly develop the vision for the future from their own perspective instead of creating a shared vision. The sudden cash flow also brought out the differences while the members had conflicting views how to use the money besides paying away part of the debt. Once again there was no real plan how to use the money to improve the business. At this point we should have pushed the development of co-operative collectively forward to create more income, but we either didn't understand the possibility or had passed the point where the original commitment was still valid and stronger than individual goals.

In her research Sarasvathy (Sarasvathy 2008) talks about the role of trust and opportunism, and points out that effectual network normally selects out opportunists because there are other opportunities that provide more immediate and surer gains. She also notes that this does not mean that members of the effectual network wouldn't later on behave opportunistically as the market coalesces into more predictable outcome distribution (Sarasvathy 2008). In the case of X8 all five members were committed to a common goal in the beginning, but after the point where the company started to make profits and things started to go well, they also started to go bad in a way.

Equality in the venture can cause trouble when rules are not clearly agreed in advance. These rules are often comparable to a prenup in marriage. In our case the problems that existed under the surface started to emerge when we suddenly had money to divide among group members and no system in place for distribution of profit according to people's contribution for the company. Everyone's contribution was not viewed and recognized equally, and personal opinions of the matter conflicted when there were no agreed systems in place. Individuals themselves did the evaluation of their contributions, not the others as it should have been done. A system to keep the financial structure fair was adjusted many times, but in the end money was the spark that ignited the mistrust among the people. It is good to remember that profits can be divided according to agreements later on, but

the ownership is set from the beginning. A co-operative's system for decision-making, one person – one vote, was built in our case in the beginning so that we will have a purposefully odd number of members. This means that there will always be a majority when voting is required and things get done. The problem with this system was that voting turned soon into a game of politics resembling the television program *'Survival'*. One person – one vote did not provide anyone an opportunity to acquire a majority of the company and possibility to take charge and push the company forward. Even if we tried our best to avoid unnecessary meetings and voting, they became a painful part of the decision-making process that didn't serve the company's best interests.

The other way to solve problems besides an analytical approach is trust, but in the end a mechanism to deal with conflict is essential. Trust needs to grow, and for novice entrepreneurs in the beginning it is difficult to see the depth and quality of trust between the partners until conflicts happen. People also change and can become more causal or opportunistic changing the original dynamics of the group.

"Whenever entrepreneurship is taught in schools one great failure is the lack of agony and failures. Even if the upcoming challenges are discussed, entrepreneurship is presented in a very positive way. The first course in entrepreneurship should be like the first venture – also the negatives must come through the examples – novice entrepreneurs should walk the walk of the experienced entrepreneurs" (effectuation.org)

Sarasvathy tells in her video *'What are some entrepreneurial pitfalls?'* (effectuation.org), how companies get in trouble when you don't agree from the beginning responsibilities and how you share profits. When agreements are missing, everyone follows the "three musketeers" rule, one for all, and all for one, and soon you don't get along anymore when the first "crush" disappears. This leads often to dissolving the company and starting anew when lots of capital is lost, especially brand capital.

The co-operative emphasizes this idea when everyone has one vote, and all the decisions are subjected for a vote. This is what happened also to us.

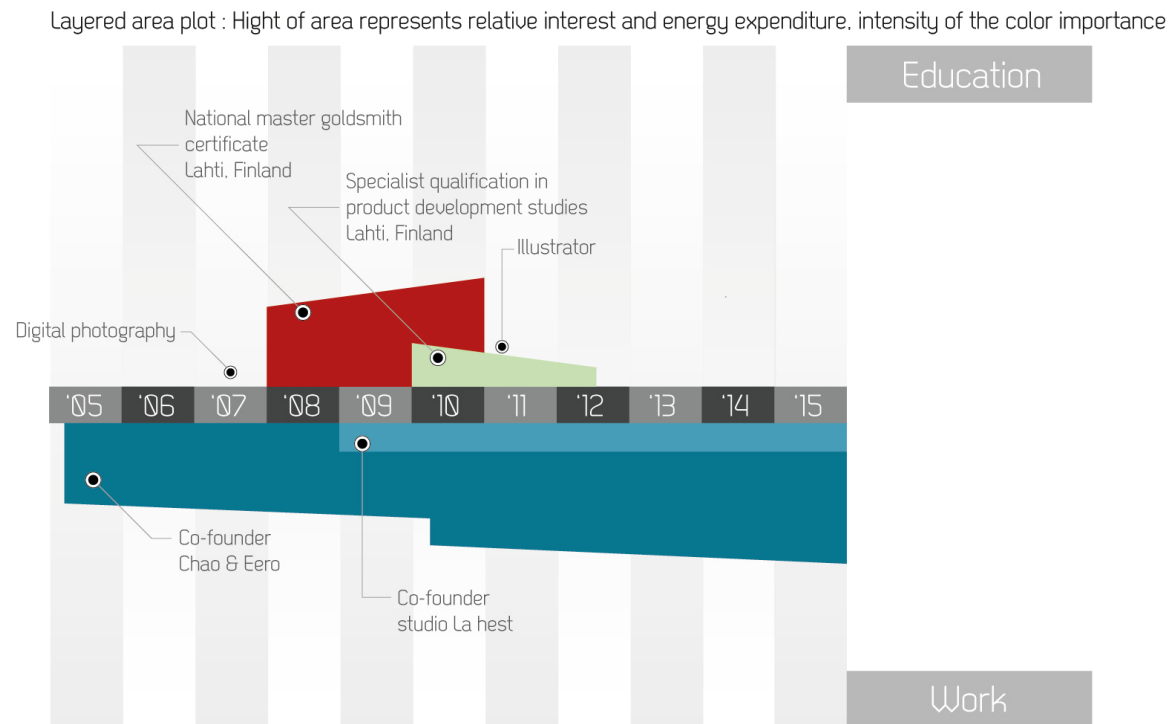
Effectuation states that the right method to approach the problems is leveraging them instead of trying to just fix them. Everything can be an input in a venture, especially unexpected problems. In the case of X8, the focus to just fix the problems prevented exploring new opportunities and it also created a strong negative atmosphere, which fed itself. A causal mentality took over when the idea of investing to experiment using the affordable loss- principle vanished and calculations of how to save more became the priority thus preventing growth.

Also many other mistakes common for novice entrepreneurs were made. As Nijssen (Nijssen 2014) describes in his book *'Entrepreneurial Marketing'* new ventures focus on the products and forget the solutions that the product should solve for the customers. The focus was in a typical fashion solely in customers not in the role of the users and other stakeholders besides the customer base preventing analysis and deeper understanding required to develop the business further into new directions. Also, the two basic functions of any business, marketing and innovation (Nijssen 2014) became slowly neglected.

This overwhelming negativity exacerbated the process to close the co-operative among the majority of the group even if the rest still saw possibilities in it. The timeline for this change was 2004 to 2008, and in the end three of the five members teamed up gaining the majority in all the necessary votes. The co-operatives rigid system for decision making in the end contributed to a more speedy process of ending it. As in many cases like these a lot of brand value that had been created simply vanished. X8 as a brand was buried when no agreement was reached what to do with it, and would it be possible for someone to purchase it and continue using the name in some format.

Among the many blind spots, one major failure with X8 was that the members never had the talk about what we were creating together. When the plan and goal were never clearly established beyond easy and obvious things, the whole process took the direction of its own and led to a conflict with no means to overcome it. Also what was missing in the beginning was a clear means test to recognize what we can and cannot do and what should be done to create the right network to access means needed. Much of the tension was created due the fact that five designers meant five individuals with their own artifacts created from their own perspectives. The common goal was in the end a secondary thing, and the development of X8 never received the attention it needed. X8 wasn't able to leverage the surprises and hardships, but this process did happen in individual members minds and it helped them later on to create something new and more successful based on this first venture and its failures making the experience an important part of entrepreneurial success.

4.1.5 Chao & Eero



Effectuation researchers think that personality has its own value, but it is not the main thing compared to motivation as a driving force. This might be true, but from my experience it is clear that the personality is an important characteristic that should also be studied more together with effectuation since it can either help or hinder the venture creation. In companies, personalities push the changes forward and just as easily they can also bring them down. If the personalities clash, conflicts can surpass any reasonable justifications for action including things like motivation. While the business model and concept for a company can be tuned into perfection, making coffee or cleaning the floors can destroy the trust, progress and the company itself. Also, causal and effectual mindsets can cause collisions if there is no common understanding between these two views.

Personalities can naturally contribute in several positive ways, they can even help to plan and execute a business model like in the case of our venture creation, where two very introvert entrepreneurs wanted to change the previous concept to a system allowing greater freedom and peaceful working

conditions with more experimental and discovery-driven approach without bureaucracy absorbing the energy. The decision to build the system this way can also be seen as an argument for playing to our own strengths and using effectual co-creation where retailers were doing the customer interactions.

In 2004, my wife Chao-Hsien Kuo and I started to push forward the idea of our company Chao & Eero (Chao & Eero Jewel avoin yhtiö). We understood that in order to push our careers forward we had to create something new and different that X8 seemed to fail to achieve. I saw the growing problems in a co-operative and wanted to start the transition early enough, not when I was forced to do so. Part of the new plan was to find the missing networks that could help the business grow and develop. This was one of the important lessons learned from the creation and closure of X8 after the experiment to build a company by five individual designers. At this point, we had also understood that there must be a balance between analysis and experimentation and that the new system and studio must support this idea.

The most important change was the creation of a new company so that Chao and I had the complete freedom to build and test all the aspects of the business. Even if we had different styles, we also shared a vision for Chao & Eero past our individual ambitions. Financial reasons speeded the decision to build a new studio even further. Chao was not part of the co-operative and she worked mainly at home renting space from X8 when needed with higher charges, which was not a viable arrangement.

For us this second venture became one of the important inflection points where everything previously experienced and learned could be applied. Chao & Eero was established on Valentine's Day 2005 as a partnership (avoin yhtiö) owned and operated by Chao and I. I am not sure was 'expert entrepreneur' the right term to describe me after six years of entrepreneurship, but at that point there was a clear change from causal thinking back to an effectual direction where unpredictable situations were approached with

effectual logic and predictable situation with causal logic. The decisions we made may not seem very radical and experimental but for us in a traditional field and with traditional background and education they can be seen as such. Also considering the history in X8 based on a system that turned from innovation into environment run solely with analytical thinking, the new direction to pursue more effectual mindset and find again excitement from an unknown path was a clear step into something new.

Our idea for the new venture was to create a recognizable brand and create jewellery collections instead of working primarily with commission pieces. Our goal was also to find customers and business mainly from abroad. The entrepreneur's decision to enter foreign markets already from a firm's inception is a decision with high risk in an uncertain situation (Andersson 2011) and for us the way to advance was to apply effectual thinking and actions. By implementing effectuation instead of causal thinking, we were able to speed the process and have the control of the process without outsiders adding costs or other liabilities. Kalinic et al. (Kalinic et al. 2014) point out that entrepreneurs are not fully aware of the logic they are using and unconsciously switch between causal and effectual logic and this was also the case with us.

I started to decrease the amount of commission work slowly after 2005 and invest my time to the creation of collections and signature style that would become an important element of the company. In the last years when I was still working in premises of X8, I stopped working behind the counter in customer service even if it meant a steep drop in income. The system in place was agreed so that the person who took care of the shop received the customers from that day. Without those shifts, orders went to fewer people. I viewed this decision clearly as an affordable loss experiment on the quest of pursuing something new and yet undefined. The new direction was a return to the situation at the end of the school where the goal was to create something new in products and especially in business. We put again greater emphasis on the craft skills and for the systematical work to

reach a higher level in our skills that would be difficult to replicate. Quality became the most important thing for us, and this decision proved later on to be extremely important even if at the moment the concept was not yet tested with jewellery collections made mainly out of silver in a cheaper price range. Our products were competing in a category filled with jewellery made in large quantities in small factories with a variable quality. For us the aim to produce high quality was not just a technical skill traditionally associated to fine jewellery including precious stones, but instead an approach to all the elements that would eventually form our brand and it's value for the customers. We also wanted to once again be excited of what we do and not sacrifice our pride and professionalism just to make an easy profit.

Even if at the moment an online presence is more or less an automatic thing for new entrepreneurs, for us it was a new direction a little over ten years ago. We started to post our works online and systematically create a certain look and brand image. We also started to push even harder our exhibition activities showing our works both in Finland and abroad in order to develop design collections and the artistic works that were eventually moved under separate artist brands at 2013. Exhibitions had started during the time in school and continued in X8, but those exhibitions were kept mainly in Finland and in Lahti gaining only limited audience. We were able to get some grant to cover the costs of exhibitions, but we had to be always prepared to cover the costs completely ourselves. We viewed the costs of exhibitions and time it took to build them as an affordable loss in order to experiment and create a foundation to a long-term plan to turn the unique jewelry from an expensive hobby into a business.

Exhibitions, artistic works, and collections were all created with the idea to find a new kind of channel instead of having a traditional retail store. The problem with the store for us was that it directed the works very strongly to commission works and also to different kind of repair and modification works that we didn't want to pursue anymore. The studio and shop of X8 had for me a wrong kind of atmosphere and open doors and constant

activity including meetings, visits, customers and telephone ringing on the background didn't allow time or peace of mind for concentrating on work and creativity.

From 2005 to 2007 we worked within the two existing systems, X8 and our own company, looking for new opportunities while still working with some commission works in order to keep the company running. Between 2004 and 2010 Chao and I participated in several exhibitions and fairs abroad in Europe and U.S. in order to find new connections and to get a realistic view of possibilities for the future channels to sell our works. Exhibitions were done to probe possibilities for unique pieces, and collections were shown in trade fairs or craft shows. This time period absorbed a lot of energy and investment but for us it was the only way to find international contacts and understand what was the level and requirements that we had to meet. For certain expenses, we were able to get either government support or grants from private foundations, but the majority of expenses were covered once again by us. The exhibition projects were planned and executed by two of us without other people including tasks outside our core means like building the display units. This do-it-all -approach led to some innovations like display units made out of cardboard that we were able to fit into our luggage for the trip to Holland. These display cases were planned so that after the exhibition we simply threw them into the recycle bin for cardboard while the purchase price of the boxes was very low. What we should have done is to find a partner or collaborator to work with the advertising and building the contacts, but once again this was an idea that we were not able to see at the moment.

In order to survive financially through these years, I kept doing some commission works but the amount of them kept decreasing and I chose only projects and clients I really wanted to work with. We also got income from royalties after Chao started to create jewellery collections for *Lapponia Jewelry* in 2006. This collaboration also helped us to better understand the realities of running an international business in the jewellery field.

The direction where X8 was heading didn't change or improve so finally in 2007 the three original members of X8 and Chao decided to start the process of building a completely new studio and workshop. The plan was to build a well-equipped production facility and showroom with no opening hours in order to have a peaceful working environment with the people we were committed with. The main idea, that all of us shared, was to have a studio without the store. Three companies in the new studio, had all their own customers and businesses, and companies shared the projects only when it made sense, not according to agreements or responsibilities or an idea to do and share everything equally. The new studio *La best* was set up only with a simple rent agreement between the members. Bureaucracy, that had been growing and growing in X8 was cut down to a minimum.

Galkina (Galkina 2013) tells in her book that effectual networks are not established, structured, and long-term oriented entities, and it can be challenging to capture them empirically. Our network in *La best (studio La best)* is difficult to define besides friendship. *La best* is not an example of an effectual network even if it fits the description in a sense that structure and long-term orientation was not needed or considered at no point. The group was established mainly because members felt they could trust each other, can work together and share same ambiguous goals for the future that can change as time passes and the environment changes. Galkina (Galkina 2013) also states that effectual networks could not be characterized by trust because of their spontaneous establishment and absence of a final goal. In my experience, networks are often very complex social systems and the effectual approach that describes network with interaction and commitment might be overly simplified and a positive view when we move from theory into practice.

Studio *La best* at the moment exists just like at the beginning as a loose network and a name, and main effort in branding and business development is in companies under the studio name. This type of system could not work without a common history and trust. The main focus of *La best* is the stu-

dio to produce designs, prototypes, and works. For craft people and designers who have skills and who make physical objects, the studio is the heart and soul of everything. Also for the Chao & Eero the new studio provided a much-needed upgrade where the quality and the amount of works and the enthusiasm to work long days increased. For us, the studio provides a place to do disruptive thinking and experimentation while there is no rules or bureaucracy to absorb energy and time.

The move to the new studio happened the same time as my two-year long quest to achieve the National Master Goldsmith certificate started and that made the first years in La hest even more challenging and rewarding. The National Master Goldsmith certificate is reminiscence from the old guild system, and in past twenty-one years it has been organized only three times. Chao had received her title already in 1999, and for me this title was a goal that I had set during the goldsmith school in mid-1990's. This was the first time the course was arranged after 1999 and I was very passionate to do it, as there was no certainty it would be arranged again in the future. My work helped to push my skills forward and achieve a title that has value, especially inside the field. My masterwork also ended one era in my production. I decided to use it as a final piece for the comic style and start to concentrate after that to the more sinister and aggressive style originating from my goldsmith studies in Germany.

Besides achieving this long-term goal, we kept producing new designs and doing a small amount of commission works for those customers that we had informed of our new studio. The move to the new studio gave us also an opportunity to make a selection of contacts that we took with us in order to modify our work to the direction we felt was right. Even if we had the Finnish customers from our studio and through our retailers, our original idea to find a suitable audience from abroad didn't move forward as we had hoped despite investing heavily to events and trips in different countries. We were able to have successful events, but we weren't able to establish long-term connections that would have given a new direction to

our business. This is something that people following effectual logic must also learn to face. The experiments and probing can easily lead to financial losses and idea to leverage those constant losses is not automatically always something that builds your means or gives you new goals as effectuation suggests.

For us going to the fairs was the only possible alternative to reach retailers, and this is still mostly the case with many companies. There are possibilities to be discovered this way, but the format of trade fairs is same as it has been for ages and provides in the end little opportunities for the surprises and new ways of building partnerships that last. What was in the end one of the most important achievement from these affordable loss- experiments for us was the realization and development of the products and other material to the level that was good enough when the opportunity presented itself.

Our quest to find right partners changed eventually when we established our first connection to Japan in 2009. In 2009, we had several small galleries and companies carrying our jewellery in Helsinki, and from one of those shops an agent for a Japanese company found a small silver earrings that she immediately liked. This little earring led to a meeting where we discussed the possibility to sell our products in Japan. In a typical Japanese fashion, everything started from very small and in a slow pace, but both parties found right away a certain connection that made the partnership later on grow strong also in a personal level. From the very first meeting the Japanese agent was able to see our passion and uncompromised work and that we had a very detail orientated culture similar to many Japanese companies. We were lucky to be in a stage of our company's development that we already had in place many of the elements that are needed in order to grow internationally. We had already built the basic elements of our company for certain level including things like online presence, branding and production capability. We were not ready at this point, but we had started the change in good time and were working hard to improve. For us, this has

been the way to get people on board and gain new means while neither of us is necessarily a type of a person who can use their energy and enthusiasm to engage people to participate.

This contact was not a result of planned action to reach a retailer or agent, but it came to be through presenting our style and quality and way of working to the people who shared the similar view. In order to accelerate this type of matchmaking luck alone is not enough. Companies need to be active to participate to the events and project to increase the chances to meet the right contacts. There is a strong need for events like '*Slush*' and '*Startup Sauna*' that are designed for building the networks between different fields and also for new exhibition concepts that don't repeat the same pattern as countless exhibitions still do. As difficult as it is for the small companies to have time for the network building they should prioritize this from the very beginning.

Just like many micro companies in Finland besides the products two of us were managing everything from marketing to brand building all the way to sweeping the floors, and constant workload had hindered our development to some extent. Finding a committed local expert in business and networks is often the required important step in order to grow globally.

Entrepreneurs should in an ideal situation find people or companies who have extensive business experience in a target market, a will and means to invest in your venture, and a wide network and knowledge of local culture, the business environment and language (Galkina 2013).

Our effectual strategy to internationalize with a resource lean approach and without formal market research worked. The new connection to Japan with the knowledge needed and the new exciting possibilities to open a new market gave us a clear goal. We were able to focus our efforts that were built on relevant skills and prior knowledge much more effectively.

The co-operation in Japan with our retailer started through their existing stores that were selling all kind of things from Finland including the famous brands like *Marimekko* and *Muumi*, and the articles that we sold were also the smaller pieces from our collections. These stores sold mainly bit cheaper price point products and even if our brand and products were strongly associated to Finland there was a slight disconnect both in how the products were presented and what the price range was in comparison to other products.

Since the relationship was new we were actively looking for ways to show our willingness to work hard and help our retailers and also show that we were trustworthy as a partner. An opportunity for this was presented to us when *Design Forum Finland* decided to organize the '*Hirameki*' (*'Hirameki Design x Finland'*)- event in Tokyo in 2010. "Hirameki" was the biggest export event of Finnish design ever organized. For us, the timing was perfect and after reacting immediately we became one of the first companies signed on to the project. The investment for the event was big for a micro company like us, but we realized that time and the target were right for us, and we needed to take a risk in order to establish our business in Japan.

The project was prepared over a long period of time, and it included lectures and gatherings in Finland for participants. Before the event, the project managers from Design Forum Finland visited Japan several times. The idea was to establish enough connections before hand, so that the event wouldn't be just another exhibition where companies and designers go to another side of the world, have speeches and opening parties and return home without any real achievements. It is a recommendable tactic to gather a group or participate to a group of domestic companies aiming to internationalize in the same target market. This approach often helps to reduce costs and risks, overcome the liabilities of newness and outsidership, and serve as an important learning mechanism and information source (Galkina 2013), but the key to success is not the project itself but how it is managed and how well it is planned and executed before, during and especially after the actual event.

The important part of the ‘Hirameki’- event was that it gathered the Finnish companies and agents working in the field of design export to Japan ahead of the visit to advise participants so that the new culture would not be an overwhelming experience. This approach for the project was the first decent attempt to answer the question how to create events or network of people and companies to have real achievements and business opportunities through exhibition project. Besides the financial resources from different organizations like three ministries and fees collected from participants, the important part of the project was the human factor and the two project managers who made things happen. The project had a clear emphasis in networking before and during the actual event, but the continuity of ‘Hirameki’ was not managed with the same intensity and the two events after the original visit that also carried ‘Hirameki’ name were modest lacking proper resources and commitment. Again the human factor played a big role after the original project managers moved to work elsewhere.

For us, the project gave also clear goals for the material we had to improve and our branding effort took again a step forward. But the main achievement for us was that we were able to present a very convincing display of products in Japan to our existing contact. By showing through the exhibition a vast amount of works, we demonstrated that we are able to produce plenty of designs and quantity combined to the high quality that Japanese markets are accustomed to. The issue with micro companies for the potential partners and distributors is often that there is no production capacity or stock, and lead times are long. Even the pricing can be off and the companies appear in many ways unprofessional when analyzed from the retailers or distributors perspective. These problems originate from the insufficient studies that don’t provide enough information for students and from the fact that supportive systems for small companies rarely have localized info that apply to different countries and fields like design.

We did eventually gain some new contacts from the ‘Hirameki’, but the main achievement was how our partnership with our retailer became much

deeper, and they felt that they could trust us as a partner associated to their company's name and reputation. This process is in Japan and in Asia typically very slow and requires patience. Trust is an essential part in any business but in the case of Japan it is a well-known fact that building a personal trust between partners is highly important due to the fact that you and your company are also representation of Japanese company itself. In Japan the importance of maintaining the partnership and understanding the cultural things like the concept of 'face' are also a vital part of being successful in the long term.

An interesting sideline of the 'Hirameki' project was the funding that we were able to secure in the end combining funds from private foundations and our own investment. We were convinced that the push to the Japanese market was the right thing to do, but the local *TE- Center* (currently *ELY-Center*) didn't want to support us even when we were able to show we had already opened our business in Japan. The project was a logical step at our point of development, but since we were not able to clearly say what the return for this investment would be, the person in *TE- Center* literally laughed at our proposal. Our investment was tens of thousands, but the official answer without any deeper knowledge of Japanese market and our case was that our turnover should be at least two million euros and investment minimum 60 000 euros before we should even consider a project like this.

This meeting was a classical situation where an effectual approach hits the analytical wall that cannot think outside numbers and patterns, and unfortunately it has not been the last. It is obvious that person on the other side of table did not have enough information about our concept, Japanese business or design export, and that his age contributed to an attitude that should not exist in organizations like these. But besides this it is very likely that the official systems for funding and supporting entrepreneurs are created with analytical thinking and with so many rules and regulations that people in the system either can't or dare not to make decisions differently.

There is no room for experiments and projects with uncertain outcomes. Also, many of the instruments in place seem to fit better the big companies than the small or micro companies. The workload to apply the support is very similar no matter what the size of the company is and this results to many small entrepreneurs getting frustrated with the process and abandoning application process in the middle. In individual cases, rules and structures can even provide an official excuse to avoid giving help or making a commitment for those officials inside the system that are not willing to risk their own performance. A model where no decision is better than making a wrong decision should never exist. But as long as there are problems in the ever-changing support systems the effectual thinkers need to learn how to play the game with analytical people in an extensive jungle of national and European laws and regulations. This is naturally more manageable for bigger companies that can appoint one or two persons solely for this task when small companies often cannot afford to stop everything else in order to pursue financial aid that might not in the end even materialize. But the atmosphere around the small and micro companies is luckily changing through the current financial situation where the value of these small units has been recognized. At the moment, only small companies are hiring when the old industries keep losing jobs. It would be important to push the development of a different instrument to match this change so that existing obstacles could be removed. As long as there is no systematic change only thing the small companies and entrepreneurs can do is to do their own part as well as possible. When you are well prepared and able to articulate what you aim to do the language you are speaking sounds more likely familiar for the analytical minds. The numbers, the lists and the pictures that help to present your idea clearly are the tools that help to find a common language.

The work we did in our case in order to find new market created a long-term commitment through collaborative interaction. This co-creation is a good example of an effectual way of working and a proof of how network turned into commitment creates new means and new goals. It is clear that without the contribution of our committed Japanese partner things would progress very differently.

In this collaboration effectual and causal thinking exist side by side. Even if the start of the business in Japan was born through an effectual approach, development continued through causal thinking in order to grow the turnover and profits. Successful entrepreneurs need to make the choice where is the point to apply the analytical thinking so that the iteration doesn't continue forever. This example of working with our Japanese partner matches clearly the framework of effectuation. For us the effectual approach still exists. Besides jewellery, we are constantly creating and looking for new products and services as our knowledge about the markets and customers grows.

Effectual thinking is also used in the other part of our work with jewellery and skills that we have developed throughout the years. Both of us have spent considerable time and effort since the 1990s to create our own unique jewellery and style with our own artist brands. Artist brands "*Chao-Hsien Kuo*" and "*Eero Hintsanen*" are very different from the Chao & Eero. For unique works, the most interesting destination seems to be the United States and few European countries, and currently these works are marketed and shown mainly online and through exhibitions and events. The logic is very similar as earlier with the design collections where we scouted the people who we could partner with. Personal style, quality of the craftsmanship and stories that unique pieces tell through the photos are all details designed to appeal to the right crowd. This way people who contact us and want to contribute get already selected, and they are more likely to become either customers or people we can collaborate with. For us, the networking and interaction remain the most challenging part of our work, so it makes sense to build the right elements as clearly as possible into our work, so that instead of reaching everyone we can focus on the groups that we feel close to, but who can still bring something new and exciting to our work. We are also more eager at this point to organize collaborative events and projects since we have the skills and confidence to manage them. It is an interesting fact that if you want to engage people, especially designers and provide them a frame that they like to work creatively, you need to

build the setting with a very analytical mindset. If you run a project that involves many creative professionals the most effective way to keep everyone happy and working is to give them clear restriction like theme or number of objects for an exhibition and take care of all the things designers view stressful like the budget.

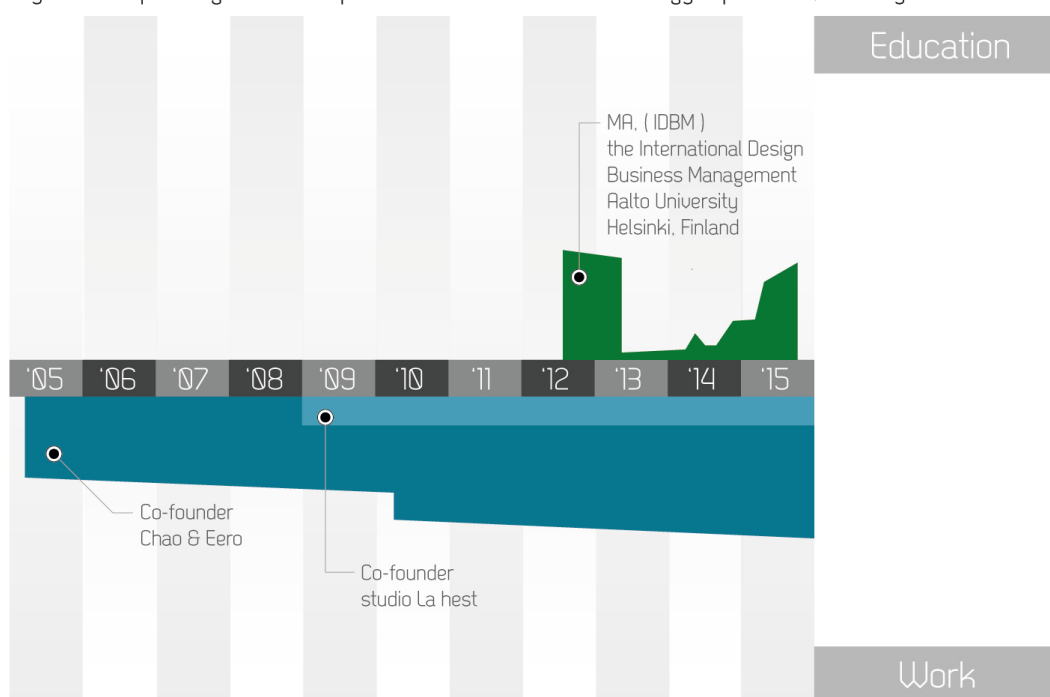
Also through the Chao & Eero and artist brands we have learned to pay more attention to the correct selection of stakeholders and collaborations. Compared to our time in X8 we now turn down many projects, and look only to those where working together is fluent and can create something new or even experimental. An important collaboration for us has become the work we do with photographers. Besides the characteristic works, we can provide them our experience and visions of what the pictures should represent without being too dominating. We are not professional photographers, but our eye for lines and proportions is something that helps us to communicate with photographers, and make their job easier making us a more favorable partner to work with. Also our quest to create something new with best possible quality puts the aim high and helps to feed the creativity among those around us and also push them to achieve something that average tasks might not do. One very important part of this type of project is also the models that we select very carefully to match the stories our pictures tell. With one of our models, we have worked more than ten years, and she is one of the most important stakeholders we have.

At this point, we aim to find more professionals from different fields to help us and to collaborate with us. Interaction with people provides new views and ideas, and a good example of collaborative improvement was the creations of brand book and new visual identity to Chao & Eero at 2013 together with an agency specialized in branding development besides just plain graphic design. This step was required so that we could tell about our brand more clearly to our customers and have a visual look to match the quality of our works.

International business has guided many decisions we make in our company, and even if we build our brand from our own goals we naturally think why our customers care about what we do, and how to best communicate the important insights with them. Companies tend to internationalize gradually starting with countries that are geographically close or that share similarities in business environment, but reaching further might bring more unexpected results if companies can tolerate more uncertainty and step outside their comfort zone. For us Japan has brought a vast amount of new skills and goals and created a strong long-term commitment. At this point, we develop our business online and in few selected countries using both causal approach and effectual experiments helping us to respond to an ever-changing business environment.

4.1.6 IDBM

Layered area plot : Hight of area represents relative interest and energy expenditure, intensity of the color importance



While our schedules after 2010 seemed to be busier than ever, the rapid changes in the business environment made us realize that we lacked knowledge in many things including the social media and creation of interaction

between the different fields. I had applied years earlier to study my MA in the department of design, but to my surprise didn't even qualify for an interview. At this point arts and craft were separate from industrial design, so it was surprising I wasn't even able to get a chance to be interviewed for studies in the field of my expertise that I had practiced years after my BA. This didn't bother me that much because I had remained a bit hesitant should I invest so much time to studies while running the company full time. My main motivation at that point was just to achieve an MA- degree, because I knew that the level of studies in craft varied and many people on the field moved because of this to industrial design during their Master studies. Since I couldn't get into Aalto, I concluded that there will be another option to do the Master studies later on either in Finland or abroad.

In a search of finding new ways to learn new skills that could benefit our company and earn me my MA, I noticed 2011 *Aalto University's Master studies in International Design Business Management (IDBM)*. IDBM master program comprises international and multidisciplinary courses, and for me it provided once again a step into something new that I could still utilize my background as a designer and entrepreneur. IDBM provided me a much more exciting option than what I had earlier, and after applying and getting accepted mainly due my entrepreneurial background I started the first intensive year in autumn 2011. I knew that doing the studies and running the company at the same time while commuting from Lahti would be hard, but I saw the IDBM as an affordable loss that would most likely benefit the company and me in the long run in a ways I couldn't know beforehand and that the studies could provide me a route to something new outside my own field.

From my point of view, IDBM's system to have one highly intensive year and then plenty of time for the thesis and extra studies were good. The only thing that made it a bit overwhelming for me was that I commuted from Lahti using about four hours daily in a bus, tram, and train. Besides that I still had to run the company. This meant that at some points I was

sleeping two to three hours a night that made me so sleep deprived that it was impossible to learn effectively. From the effectual point of view the extremely tight schedules in IDBM raise the question should the studies be fitted into so tight schedule that there is no time for exploration and experimentation even if they are talked constantly and considered as a valuable elements.

During the studies 2013 I also encountered one of my 'lemonade'-moments after an accident that broke my finger severely. I ended up having three surgeries and being away from the goldsmith work a total of thirteen months. This experience made me review what could be improved for the future if something similar would be to happen again. Losing a finger or hand is easily a catastrophe for a craftsman and if there is no alternative plan or different experimentations going on, business can be finished in a moment. This surprise started a process in our company to expand our offering wider so that we are better prepared for the future, including the time when our age starts to prevent working effectively.

For me, the studies in IDBM were exactly what I needed, not least due the fact that many students were six to eight years younger than me providing fresh approaches beyond my scope. Also, the combination of different fields was for me personally very refreshing while most of my contacts and friends are somehow related to design or jewellery. IDBM gave me a glimpse of approaches from the business and engineering perspective that I had lacked.

The most important and the most interesting project during the studies was for me and most likely for many others the industrial project that was done during the first year. I was working with the team helping to improve the forestry and furniture field in Peru and this project provided to us a learning experience in a very different way that what was originally planned. Half a year work in Finland was rendered almost completely useless in fifteen minutes after the first discussions in Lima, Peru when we realized

that our theoretical material was not suitable for the requirements we were facing. Our solution was to build new workshops overnight for the following days, and after pulling this through our project was in the end successful helping us to achieve more than all our work in the previous six months combined.

Helping local micro companies in Peru was naturally a good opportunity to learn more about entrepreneurship for me but in general the studies focused educating us to become those people who can operate in a larger companies as the experts between the different professions and approaches. The lack of clear entrepreneurial approach that could have been a logical part of the studies and help the transition from school to real life for entrepreneurial-minded students was for me the only thing that was missing from the experience. Even if there are supportive units like *Aalto Protomo* and events for entrepreneurship linked to the *Design Factory* like *Aaltoes* and *Startup Sauna*, I felt they were never introduced or included strongly enough to our studies. Aalto University has so many different units that it is easily possible to go through the studies and never get to learn some of them that might have been very helpful for the students planning their future. Introducing more innovative micro companies besides the big companies could provide students also an opportunity to learn how to innovate something new from the very beginning. Working with big companies means often improving existing structures or solving problems inside certain limits, and it doesn't necessarily provide a completely open field for innovation and creativity.

While the focus in IDBM is on working with and in the big companies, it might be an idea worth considering that entrepreneurial projects and studies could be brought as a stronger alternative by giving possibilities for students to choose what type of projects they can work with during the studies. This way those students who already know they will pursue the career as an entrepreneur could start their journeys earlier. This shouldn't be too difficult because the way IDBM works is close to the effectual thinking with

their approaches to the prototyping and experimenting and building on the means using the multidisciplinary networks. If entrepreneurship should become a bigger part of IDBM studies in the future this should also be reflected in the interviews. I feel it is also important for the IDBM to keep gathering under their wings strong characters and interesting personalities to create not just innovative collaborations but also conflicting views and uncomfortable situations to solve. The structure of IDBM to mix people with the analytical thinking and experimental mindset is very much the effectual way to create something unexpected and it should be encouraged even further inside Aalto University.

Besides learning new means it was important for me to take some time away from my daily work in the jewellery field by doing the studies in IDBM exploring what kind of new directions I could develop for our company in the future. This idea was important not just for growing the business but also for expanding the possibilities to work in case age or accident would make the work with the jewellery impossible or difficult. For me, the pattern in my career is that inflection points and moments where I face something new and unclear help to create new directions and new means that improve the business much in the way the effectuation proposes.

I think the main outcome of my MA studies is that I am able to have much broader view to develop and understand my own work, and I am more capable of pursuing business opportunities outside the narrow field of jewellery that I have focused on for years. Also for me personally achieving first the Master Goldsmith- certificate and then doing the IDBM – studies marks a personal point that I feel comfortable to venture outside my own field. I feel that I have already earned my place on the jewellery field and my acceptance inside the community doesn't disappear even if I do other things. No matter what I do in the future, the jewellery field and its standards for professionalism are foundations for my work.

5 Summary and conclusions

While this case exploration and illumination can't provide conclusive results to the effectual research it adds observations that support effectuation and the value of effectual thinking in venture creation. The principles and the logic of effectuation resonate strongly with my experiences as an entrepreneur. This is especially true for me because of my design education and the way design processes seem to connect with the principles of effectuation already during the studies. As suggested by Sarasvathy (Sarasvathy 2001) the elements of effectuation are enactments of experimental and iterative learning techniques that enable entrepreneurs to discover information about the future as time passes. Also effectuation can foster a more positive attitude towards failures (Ucbasaran 2008).

5.1 Implications

From her interviews, Sarasvathy has gathered characteristics that expert entrepreneurs share. As obvious as it seems the first thing is that successful entrepreneurs start the company. Planning is essential, but only the action takes the entrepreneurial knowledge forward. An expert knows how to keep failures small, smart, early and useful by learning from them and acting again. Failure teaches entrepreneurs what not to do and how to do things with a smaller footprint so if failure happens it is not disastrous (effectuation.org). From my experience the effectual way does seem to be a better way to tackle the moments of failure that will happen to most of the entrepreneurs and that as an effectual thinker in a design field I have more chances to explore opportunities around me when strict analytical thinking is not the only system to follow.

The framework builds on the insights gained from interviews of expert entrepreneurs is easily understandable and coherent, but it looks like it is not

easily adaptable to novice entrepreneurs who often lack the broader understanding of entrepreneurship and business development and focus on small details instead. The effectual mindset suits the expert entrepreneurs because experience and failures together help to see the different new business opportunities worth pursuing also outside the core business. Experience also help you to see the contingencies as a clue of something new and exciting. It is good to point out that when comparing the novice entrepreneurs and the experts the differences between these two groups are more than just expertise in business, including differences in age, life history, educational background and other dimensions (Baron 2009).

Understanding effectuation and the effectual cycle can help an entrepreneur to create a more systematic approach to organizing and executing those functions they most likely are already undertaking. The effectual framework provides us with a short and logical list of actions and means that we can utilize, and it shows how these elements are linked together. Effectuation also illustrates that the way many entrepreneurs run and develop their business is perfectly acceptable even if it is not the way business literature often tells us.

Fischer's (Fischer 2012) four propositions sum up the main ideas of means and action based entrepreneurship. Propositions are as following:

1. Existing resources serve as a source of entrepreneurial opportunity
2. Taking action is a mechanism for overcoming resource constraints
3. Community is a catalyst for venture emergence and growth
4. Resource constraints are a source of creative innovation

Fischer 2012

The differences the theory of effectuation points out between novice and experts seems to be differences between my first and second venture and suggests that the moments and points where either conflicts or new directions provide an opportunity to apply more effectual thinking should be viewed and managed with due care. It looks like the nature of people from

fields of craft and design naturally push them towards more effectual thinking if the environment doesn't constrain them by imposing an analytical mindset. Effectual actions seem to also grow from the environment and from the personal goals that entrepreneurs view as fulfilling life and an environment to work. Personal and unique perceptual lens affects how goals and opportunities are perceived. While this thesis analyzes the effectuation and the entrepreneurship through my own personal experiences it is good to point out that everybody's lens is unique and different.

This case study has shown many good examples of the positive design processes and also the blind spots during my journey as a jewellery designer and entrepreneur that match the framework of effectuation. The means and especially the curiosity towards experimentation are something that starts to develop from very early on before undertaking professional studies. In my case also the haptic understanding and training for the eye and imaginations set me into the path towards design studies from very young age. The independent mindset and the appetite to consume and create stories is also the base for my entrepreneurial mindset as much as the work ethic and the basic skills to use tools through work and chores we were expected to do. This background made me realize at some point my set of means and direction where I could aim and use them even if the clear goals were still lacking. The craft and the design became much more appealing option than my academic studies.

The strong starting point for my professional career was the boutique type of education with enough resources to support learning. Already my first strong inflection point, the entrance exam typical for the fields of design and craft, gave me my first real means test and sent me to the effectual path. The important learning from the effectual point of view is the high standard set by the exam that gave us extremely ambitious goals from the beginning. Constructing the class and building the environment that supported the experimentation were also highly effectual elements that the Institute of Design in Lahti provided us. The effectual cycle started to work

from the beginning including all the elements and principles even if the commitment part didn't include enough variety across the different professions and fields. Because designers often possess a strong voice and the knowledge of their means the similarities between design processes and the effectuation can be seen even before developing one's level of expertise. The way the design processes were conducted during my studies in Lahti matches the effectual principles very closely. The important elements present supporting the design processes included also the good financial situation and the fact that the school was at the moment in an experimental transition from one system to another. The unofficial systems from the network building to the entrepreneurial learning outside the official courses helped us immensely. The exchange program in Germany provided me with one of the most important studies and again an inflection point setting me in a new direction.

Even if the studies in Lahti helped to focus on building the skills in craft and design, we did end up lacking many other skills outside of our field that could have facilitated a smoother transition to entrepreneurship. Also, the overly strong causal approach in business studies led to a situation where our creativity started to suffer after we proceeded to entrepreneurship without thinking and exploring effectually.

The X8 can also be seen easily through the effectual lens. Matching the Bird-in-hand- principle we build our business on the means and goals created during the studies, and took it forward with interaction and commitment creating new goals with our network mainly from the school. We embraced the personal control like the Pilot-in-the-plane- principle tells by taking control of our own future instead of becoming workers for the industry. We took the action and started our business even if many things were unclear and not yet proven. While we planned the company we had lot of ideas of experimentation that could bring something new to our business and we were even active of searching and utilizing slack resources around us due small budgets starting from converting things into the specialized

tools we needed. Using the family and the friend as help in the beginning was also a part of a typical quilt building where you start from the existing contacts and advance towards the purposeful creation of new contacts. The lemonade principle in the case of X8 worked so that setbacks related to the co-operative helped to develop new personal goals that finally helped us to take the next step and build the second venture. This experience also demonstrated to us the importance of positive thinking while running the business with challenges and how experimentation can show a way forward when the situation is stalled.

The clear negative experiences that can be seen in the X8 are the way we abandoned the effectual experimentation to create new goals by turning more towards the causal thinking as years went by. This way of thinking came partly from the outside of our company while the supportive structures around us offered in most cases the analytical solutions to our questions. It is clear now that our quilt was not built diverse enough. The clear goal setting was missing and attempts to fix the situation later on were done by adding more causal thinking instead of effectual thinking that could have opened up new business opportunities. Still the X8 is an essential part of our entrepreneurial journey, and its importance can't be downplayed. Without the X8, there is a great chance that I would not be an entrepreneur now so in the end the action we took was the key to moving forward.

When I encountered my next important inflection point moving from the X8 to the Chao & Eero I feel I also started to move from the novice phase towards the expertise and professionalism. The road to the Chao & Eero was created by using the affordable loss- principle when the new direction towards unknown results was done by sacrificing the income from the commission works and investing to the fairs and the events without any guarantee of the results. The experience with the X8 made us also learn from the negative aspect and notice them as an input in the creation of the new goals and a more diverse business. This is the work we currently focus on through the network evolution that helps us to find contacts outside our

own field and people sharing the same optimistic and experimental nature. With the move to Chao & Eero, we analyzed our means and set new goals according them including more complex elements like our introvert natures. We started again experimenting by using the principle of affordable loss and managed to build new committed interactions like the case of establishing the business in Japan shows in a form of clear inflection point making the effectual cycle turn again by creating new means and new goals. The personal control for us as the Pilot-in-the-plane- principle points out is the key to our business and creation of our future. A part of the future plans are the IDBM- studies that can be seen as an affordable loss experience adding means that help to set and create new goals leading to new products and markets.

The causal thinking was also applied in several occasions like in the case of doing the business in Japan after the original concept was developed. It is clear that at this point after achieving a certain level of expertise effectual and causal behaviors are complementary in the entrepreneurial processes. In order to conduct professional business it needs to be managed with causality after the format for the new product, market and company has been found. As the case of X8 demonstrates, applying the causal thinking can also be counterproductive for the novice entrepreneurs when it hinders the development of the company. Effectual and causal thinking support each other but they need to be applied in correct moments. Finding the financial support with the effectual arguments might be impossible as well as attracting the investors or the new partners to whom the enthusiasm and promises are not enough. Also scaling the business requires a causal approach.

From my point of view the part of effectual cycle that is the weakest link is the gathering of stakeholder commitments that is much more complex issue in a practical level than how it is shown as a part of the framework. The whole social and political part of the effectuation related to commitments is from my point of view too simplified so that the framework could be accepted as it is. More empirical studies also in the design field are needed to

come up with the clear answers related to the questions is the effectuation over-simplified in its current form. My case study is not necessarily the best possible to analyze the moments where I have encountered people and how this interaction has developed into commitment because of the small number of these moments due my highly introvert nature. The case of building the business in Japan does still demonstrate how building the commitment is an important element that is required in business.

The narrative of my journey clearly picks up many things between the framework of effectuation and real-life experiences and it shows how design area is a node for ideas for the wider world, but it also points out the biggest failures in the design field, mainly the tradition to isolate from the other fields outside the own cliques. There seems to be a correspondence between Sarasvathy's framework of effectual thinking and the way designers work and think. Both effectuation and typical design process are based on the cycles of learning and creating new means. Also, principles related to interaction, leveraging surprises, and affordable loss are very similar. The effectual literature emphasizes also many important elements for entrepreneurs that I can relate to like focusing on win-win- situations even when something negative happens.

Many of the failures in my case study especially with the X8 can be seen as inevitable learning experiences that must be done in order to build the understanding and gain perspective to analyze one's actions. Many things must be done in practice, and this leads us to the conclusion that applying effectual thinking is challenging for novice entrepreneurs building their first venture especially without proper guidance. And even if there is someone to guide inevitably something unexpected will happen that renders the planned actions useless. The main thing in these cases is to understand that these 'lemonades' are the essential building blocks to build the understanding and the experience that together creates the expertise that makes a successful business possible.

At the moment basic entrepreneurial studies in BA- level in the schools that I have studied or taught entrepreneurship and advice through online services like *uusyrityskeskus.fi* seem to focus on supporting infrastructures instead of real questions about the entrepreneurship and the elements like networking that support the creation of successful businesses. It seems that the knowledge of bookkeeping, taxes and other mandatory tasks is still too often viewed as the skills that turn designers into entrepreneurs. It is easy for the schools to have a mission statement that is no more than a lip-service commitment to the entrepreneurship that cannot withstand closer look.

The approaches to building the entrepreneurial mindset in schools can be improved. Planned processes throughout the studies that could help students to be more prepared to start the company after the studies are still missing inside the departments of School of Arts, Design and Architecture and most likely in many other institutes too. A big part of this problem is the culture typical for design schools where groups and cliques are closed from outsiders. Rethinking the entrepreneurial path is a design challenge that should be possible to solve in the design school.

Students and schools should adopt a more open approach to collaboration with the people outside their cliques and closest circle, still maintaining their skills and the strong identity, and embed more systems into the education that support the creation of the right networks from the retailers to the manufacturers to the people who have valid knowledge of things like the contracts and intellectual property rights. The positive entrepreneurial mindset with sufficient resources and co-creation helps to create a better business, scale the business and ease the workload of a singular designer. The value of the experimentation should not be forgotten amongst the set goals.

The designer's ability to innovate, explore and test should be considered as the main strength when creating businesses. In his book *"Designkuplia"* Hannu Pöppönen (Pöppönen 2013) points out successful events from the Aalto University, especially the *"Sauna Buss"* and the pop up restaurant *"Hel Yes"* that were creative concepts breaking the traditions. The question he asks is why this type of innovative and successful concepts have not been reproduced or evolved further in the leading design school in Finland that aspires to be one of the leading design schools in the world. These two events are good examples how close the entrepreneurial and the experimental thinking are to the effectuation, and how design processes can help to create something new. Pop up- events are easy and affordable to arrange as an affordable loss- experiments and they should be part of the design schools and the company's activities to find creative ways for business development. The experimentation with limited resources forces to think differently where too much money may lead to the use of old proven ways. Pop up- events also make people take the action as effectuation points out. Small actions are always better than the grand plans that never materialize. Pop-up- events can work as a route towards the creative entrepreneurship and the creation of better companies bringing something new also to the field of design.

There must be a setting and the financing for this type of projects to flourish, but other means are even more crucial, mainly designers skills to design and ideate and be comfortable with the uncertainties that experimentation brings. These experimentations should be done outside the classrooms and studios and part of the plan should be the creation of opportunities for surprises. All this should be done with right networks and in a way that breaks the routines and designers comfort zone in their own groups. The effectual framework is all about creating the experiments and it should resonate strongly with the design education as a way to develop business instead of pure causal thinking.

An interesting idea for the experimental approaches is also to include expert entrepreneurs that can also learn from the ways designers work and ideate. Collaboration with the companies is often done so that students get only the brief and later on report their findings when working together inside short project would more likely benefit both parties much more. The interdisciplinary work between the different fields seems to be the thing that must be added more to design school experience and collaboration between the novice and the expert entrepreneurs could greatly speed up the embedding of entrepreneurial mindset including risk taking and deeper understanding besides the obvious elements of entrepreneurship. Through this type of collaboration also the negative aspects and failures could be presented to the students in a right context.

Even the IDBM that provides a lot of new approaches during the studies and plenty of interdisciplinary projects seems to focus educating people to work in bigger companies and organizations rather than becoming entrepreneurs. The IDBM does however teach lot of valuable ways of thinking, like the T-model where the students own studies are the main focus and the base where the understanding of the other fields is added to broaden the view. This approach gives a valuable mean of noticing opportunities also outside your own field. The IDBM has also right approach to testing, prototyping and failing fast and cheap same way as it is done according the affordable loss principle. The networking is also emphasized greatly and the multidisciplinary teams compose the core of all the projects. What IDBM could still add to it's offerings is a course where students could even better learn to sell and promote their unique means that can help them either to land a job or create a business around them. Just like a big percentage of goldsmiths from Lahti move to do something completely different after their highly specialized studies, there is a real danger that also the IDBM graduates don't capitalize their unique means to the full potential.

Aalto University has also *Aaltoes* supporting the startups and in it's ecosystem there are events like *Slush* and *Startup Sauna* that provide much-needed

venues for the networking with the investors, the lawyers, and the experts who can guide new entrepreneurs. Aaltoes and its practical work should become a bigger part of the studies so that the idea of building the business in collaboration with the other fields would be seen as a normal concept. Novice entrepreneurs that use the possibilities of Aaltoes seem to adopt the thinking that group of entrepreneurs must be broader than the friends inside a classroom and that there is a real need to find expert advice from the different fields so that the business can be scaled into real business.

A key concept for the educational path from the entrepreneurial perspective should be the development of business opportunities throughout the studies instead of giving students a package of knowledge focusing mainly on the support infrastructure in the end or inside a project or a course. Also the skill of selling, pricing your work and marketing should be taught much more right from the start in all the departments in a way *Pirjo Suhonen*, co-founder at *Ivana Helsinki*, has done while teaching the fashion design in Aalto University.

It is also worth mentioning that the foundation for the designers besides the entrepreneurial skills is and must be in the future the art, design and artisan means that successful businesses can be built upon. The challenge is that the base for these means must be built during the BA studies where the changing policies and the decreasing funding make the task challenging. Many of the problems are solved or attempted to solve inside the schools, and it would be beneficial to reach out and ask help and advice from the different experts and allow them to give their input to the discussion. The minimum effort that should be done is establishing even more collaboration between the different units of the schools that still doesn't happen for example in Lahti where the design and the business students could benefit from each others much more if effectual mindset would be applied to build the interaction and the commitment.

From my personal experience having teachers who have or have had companies and background working in different companies from designing to the manufacturing is a strong supporting element to implement realistic picture of entrepreneurship that exists beyond the official courses.

Naturally the visiting lecturers and guests are important, but their role is normally restricted to delivering a small piece of their experience under predetermined theme or title in a short time. Hindle (Hindle 2010) points out the important role of a well-balanced and well-mixed team as an answer to entrepreneurial education instead of a universal perfection in every single teacher and his strong opinion is that the business school is very likely the wrong place to teach entrepreneurship if it doesn't have embedded imagination and experimentation.

The important element for the surprises and innovation for the Aalto could be a dedicated space or studio that would be an experimental unit that is strongly connected to the different departments, classes and courses so that it cannot go undetected by students. This space or unit should not be too tightly bound into the traditions of business and the entrepreneurship education but more towards design. The location alone is not enough to bring people inside, but they need to be pushed in at least in the first time. Also the interaction between different groups has to be build through the courses and the projects in a fashion IDBM does it, otherwise there is a strong chance that the groups will hold to their identities by fortifying themselves away from the others throughout their studies.

What are also needed are the instruments by government that help designers to find partners to co-create their businesses around the means they have in a way that allows to some extent experiments and possibilities to surprises without the bureaucracy and the strict linear thinking that prevents using design processes as a part of business development. Institutions like Tekes and Finnvera should invest to bridging the gap between the strict analytical thinking and language and the business ideas that are new and noteworthy but cannot prove and present their future with the

numbers when there are many unknowns still ahead. A recommended first step would be to create a 'skunkworks' division without the burden of the bureaucracy and hire people with design studies to give their fresh input. Students with the IDBM background would fit the task of changing the organizations from inside perfectly. There is also room to apply better assessment of the companies that should receive support. All type of people are still encouraged to become entrepreneurs even if their business ideas are very similar to the existing ones in the fields with harsh competition and companies with strongly established businesses and networks. People are also encouraged to become entrepreneurs even if their character doesn't fit the entrepreneurial lifestyle. New approaches that add something new to the field and have a change to morph into something greater should be rewarded even more not just through financial support, but with mentoring and a long-term commitment instead of treating all new ventures equal. The challenge for mentoring is that the match between the mentors and the entrepreneurs should be as perfect as possible and by following the typical three key phases of new ventures, start-up, midpoint and the endpoint, mentors should be able to look over the companies three years rather than just three days (Cull 2006). The ways innovations are supported are the crucial elements of successful entrepreneurship together with the way people are educated.

The government has also a crucial role through their support for different design organizations that have an impact in practical level. The case of Design Forum Finland closing their store selling Finnish design at 2014 is an example of complex failure by many parties to create and sustain a place to promote and sell the design for the right audience. The store did not only sell objects, but it was also the single most important place in Finland for many small companies to promote their designs and contact private customers, retailers, and media.

One of the most accurate analysis of obstacles and current situation for young designers in Finland can be found from book by Hannu Pöppönen

(Pöppönen 2013) that describes in details the role of Design Forum and how it has changed during the years and how many of the platforms to showcase young designers like '*Nuorten Forum*' have disappeared. The book emphasizes the crucial role of the venues to find the contacts and showcase the designer's works in Finland and abroad giving credit for Aalto's annual '*Masters of Art*'- event and '*Protoshop*'- event inside *Habitare*- fair.

The creation of the venues to bridge the gaps between young designers and companies, investors and even media should be a constant task in every level so that Finland can produce interesting products and services in a broad scale and attract all the potential attention that eventually helps to create more contacts, more opportunities, and more profitable business.

5.2 Further research

Effectuation is still a relatively young concept and it needs more validation through empirical illumination and validation to become a widely accepted theory and to move further from its original simple form. Effectuation also needs a broader group of researchers while at the moment a large portion of the publications is from Saras Sarasvathy as an author or co-author.

In Finland effectuation is still a relatively unknown approach, and according to my study it can provide new kinds of insights about the entrepreneurial thinking from an individual level to the schools and all the way to the government organizations supporting the entrepreneurship. Understanding effectuation better can also define the role of causal thinking; how, when and where it should be applied.

An interesting topic for research is naturally to collect more case studies like this one and research further other designers and craftsman and their use of effectuation in their venture creation compared to people from other fields due to close connection to experimenting with ideas and mak-

ing prototypes and objects without large investments and natural resonance between design processes and effectuation.

Effectuation research can also be undertaken from an educational perspective. This research should concentrate even more to the design schools and the design companies and their processes that seem to resonate with the original framework by Sarasvathy as my research has pointed out. A research that would identify from an effectual point of view what is done and what is not done to support entrepreneurship inside Aalto University or in organizations like Tekes or ELY- centers would greatly benefit young designers in the future.

The two elements of effectuation that seem especially interesting for the future research from the educational perspective are ‘the patchwork quilt’, interaction with people and commitments by stakeholders including community engagement and the ‘bird-in-hand’ means that designers possess. The important question is how to create more collision between the cliques and silos and how to use this to pursue opportunities that can be developed to become a logical and functional part of design education. Approaches that are build upon experimentation and intuition may be hard to sell to those who decide the direction for the Aalto University, but this should be pursued further. Intuition mixed with the analytical thinking, not planned and mapped path alone is most likely the answer for the question how to collide analytical thinking with experimental. Means depend on your perception of your abilities and subtle details like this cannot be guided solely with planning. These means and the ways designers build their design school experience around them should be studied further in order to find actions to help to develop the entrepreneurial path starting from the entrance exam.

In a bigger scale questions to research and solve are how to fund innovation instead of bureaucracy and how to create spaces and environments in publicly supported infrastructure for innovation, failures as learning experiences and experimentation.

This thesis focuses on validation of effectuation through case identifying enabling and inhibiting processes and inflection points from my past and making the framework of effectuation more understandable at a behavioral level. Personally I will continue to use effectuation to improve my business and study further can effectuation work as an analyzing tool to help me to be even more prepared for sudden changes in the environment. For me, effectuation also provides a framework that both justifies and helps to plan short-term actions to create long-term success on the contrary to my previous understanding of the traditional way of planning ahead using causal logic. I will use my findings and improved knowledge about effectuation and entrepreneurship as whole to develop my work and expertise and hope that this thesis provides a personal and valuable addition to the research of effectuation and some practical ideas benefitting other entrepreneurs.

The intersection and links between design processes, entrepreneurship and effectuation is highly interesting and I hope it gets studied further while it can clearly benefit Aalto University and student in a very practical way. Elements that entrepreneurship is build can be explained well with the help of the effectual cycle and they can also be easily translated into action that can be embedded into a part of the design school experience. Even if successful entrepreneurship often requires experience that cannot be taught during the studies an effectual approach can help to build the path towards acquiring greater expertise earlier so that the transition from the school to running the company is not unnecessarily difficult.

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